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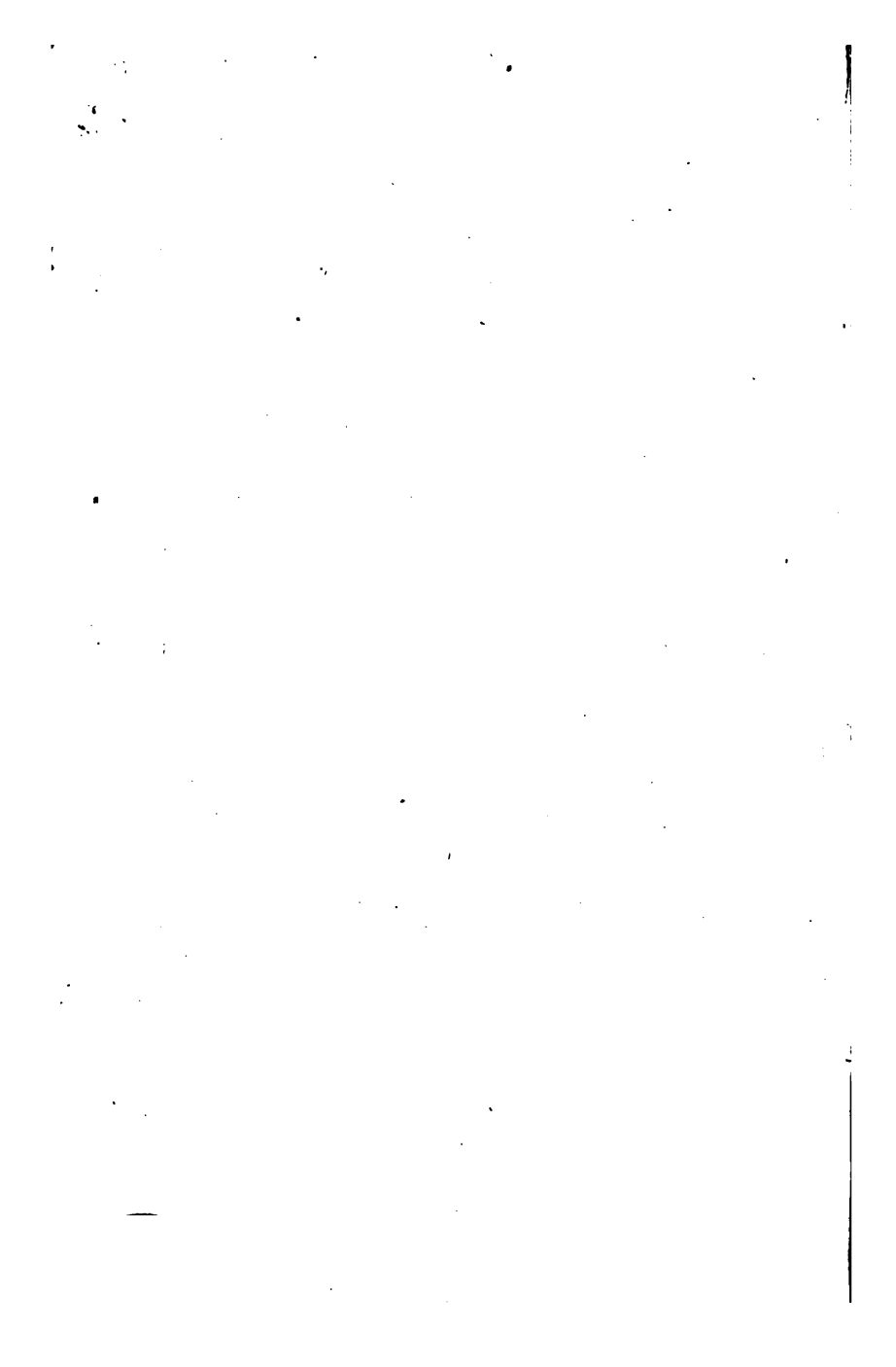
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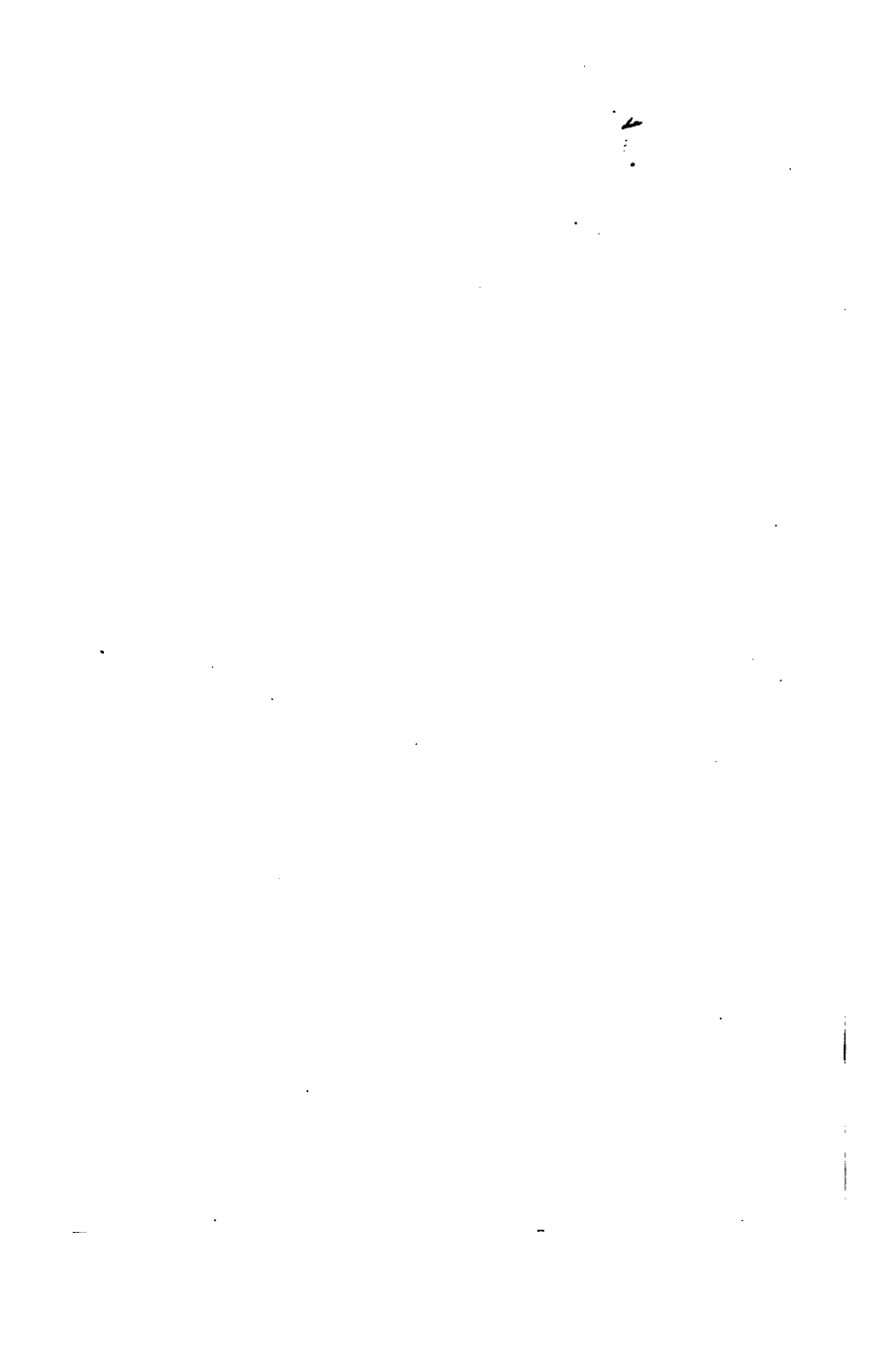
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INVENTIONS AND INVENTORS.

INVENTORS A GREAT BENEFIT TO THE WORLD.

OURS may be called the age of inventions; for it surpasses all others in the production of all kinds of contrivances for saving time and labor; and great are the changes that have consequently been brought about.

Everybody admits it is very desirable to save time and labor; for they think human suffering may be lessened by lightening the burdens of those who toil, and more opportunity given them for the cultivation of their intellects and higher aspirations if more time is at their disposal; to which, when their hours of labor are too long and their toil too exhausting, they can give no due attention.

Our object is not to discuss the condition of workmen in general and point out the many obstacles they must contend with, but to give our ideas concerning a certain class which we think may be of benefit to them, as we have had experience in this line and perceive how they are victimized to a great extent through their own ignorance and the cunning of those who derive benefit therefrom.

We mean those who spend much time and labor in bringing out inventions; who have been of great benefit to the world at a loss to themselves.

Without inventors it would be necessary to imagine an entirely different world, in its productive resources, from that in which we live at present.

Without them the development of man's muscular power would still be the principal aim of those who desired to have their country solidly established and capable of competing with other nations, as was the case in earlier times, when scientific methods and machinery were of only secondary importance; for their great value was not known, and the strong man in more esteem on account of his mere physical strength.

All the artificial changes brought about in the material world since the time man maintained himself without tools, or those only of the rudest sort, are due to the labors of inventors. And, it should be remembered, it is not to inventors of literary productions or things mostly artistic we are indebted for the advances that have been made, though certainly of great value in themselves and seemingly indispensable, so much so we are apt to over-estimate them at the risk of thinking lightly of those purely mechanical. The rough, unskilled workman, as he is thought to be, must precede the one who toils without soiling his hands.

The pilgrim must brave the storms of the wild Atlantic, hew himself out a habitation in the howling wilderness, erect his own and log school-house ere the stately mansion rises to receive the aristocratic pedagogue who manages to get such an enormous salary as to absorb, with other impositions, the hard earnings of those who toil, and render it more difficult for the children of the poor to obtain the necessary education, than it scarcely could be in the hut made of logs. Mechanical inventions that contribute to our necessities are always the forerunners of the more scientific.

The plough was a much more useful invention than the sun-dial; because it is of more importance to procure something to eat than to know the exact time at which you eat it.

The mariner's compass was a more useful discovery than a system of logarithms; as it is better to be certain in what direction you are sailing than to save a little time in calculating.

The invention of the plough and the compass is considered to come within the scope of lower intellects than those that brought to light the sun-dial and logarithm tables. Still, who will question which is superior in point of usefulness?

Before the plough the sward was turned by the strength of man's muscles, and he could cultivate only a small portion of land; but the invention of the plough made possible utilizing the strength of animals in preparing the soil, which, being much greater than his own, the gain was enormous.

Before the compass, navigation was very limited and the geography of not very distant countries and the customs of the people were full of mystery. This was the time the story-teller was abroad and listened to with attention.

However exaggerated his tales it was difficult to refute them. It was generally admitted that a country of which little was known might have men and animals as different from others as if they belonged to another planet; and this was partly borne out by fact, for every new country furnished something remarkable.

The sun and stars served them pretty well to make voyages, but when these were invisible great was their fear; extending their explorations very cautiously lest they would not be able to retrace their course. The compass gave them confidence, opened to them a new world, brought all nations into communication, dispelled the mystery that hung over them, and rendered the acceptance of another "Gulliver's Travels" as anything else but a fiction, by a too credulous people, an impossibility.

We could cite numerous examples to prove the use and benefit inventors and discoverers have been to the world, were it necessary; but, in spite of all the good they have done, their labors have been accompanied with many disasters, and many an inventor has been ruined by his invention.

Taking everything into account, it seems this is the price the world must pay for whatever is valuable in this regard; that there must be many attempts, many disappointments, and much loss before a real good is obtained. A good invention must be preceded and followed by a throng of worthless ones. Those that precede prepare the way for it; those that come after, imitations or attempts at improvements on it by inferior minds who are dazzled with its success and desirous of sharing the reward.

It seldom happens that any great invention is the result of one man's exertions; his life is too short for that, and where he leaves it at his death another takes it up.

The process of forwarding inventions is, perhaps, the slowest in the world. This arises from the great difficulties to be overcome, which none but inventors can appreciate, and they not until experience has taught them, for none are so sanguine before trial of success, or so jubilant at the prospect of removing obstacles. Few inventors would care to undertake the job if they knew the great length of time it would require for completion. The glory they hope to obtain would lose much of its brilliancy if they were aware that old age or death would have arrived before it came to them. Nothing can make them believe how much time

must elapse before a perfect machine can be attained, when there is no doubt of it otherwise.

It is no small task to prepare patterns, get out castings, and put them together properly. The first machine is almost sure to be a failure; then patterns have to be altered, or new ones made, castings on which great labor was bestowed thrown away, and the second machine perhaps fall short in many things, — having fewer faults, no doubt, but still far from perfection. It thus happens that many machines must be made before the required one is produced.

All this trouble and delay takes place where the idea of the new invention is all right in itself, and is only what attends the work of construction. Who can tell the mountain of trouble where the idea is any way faulty?

A successful inventor, like a successful soldier, must have beheld the prostrate forms of his comrades strewn over the field who were not so fortunate as himself. It would be well for many if it was the world that paid for its useful inventions in the same distributive manner taxes are paid; but it is not. Those who are foolish enough to invent have to bear the expense, and in not one case in a hundred are they ever recompensed.

When a man goes to war he has some misgiving as to his safety, and may have made up his mind to the risk for the object for which he fights. We doubt if ever an inventor had a misgiving of a similar kind, or thought he was sacrificing himself when he devoted his energies to inventions; only becoming aware of it when he lay prostrate like the victims of war, with the works of his folly scattered round him in the shape of models, patterns, machines, tools, etc.

If health and courage remain after such experience, and he has any share of sense left, he will use it like other men, and lead a most humble and plodding life, satisfied with the wages he can earn, as he never was before; no longer disturbed by the reveries that show him it is possible for even an obscure individual to do a good deal in helping on civilization and the general good by bringing out new inventions.

No kind government will step in when he has impoverished himself with experiments and make his path smooth with the consolations of a pension, though it gave him great encouragement to make them; at least he held that opinion from the representations of patent solicitors who were only

desirous of taking out a patent for him, to get their fees for the same. The scoffs of others will be his only reward as long as he was not successful. It is strange that inventors will never learn from the example of others what may happen to themselves, and that the chances are as a hundred to one against their coming out without loss.

There is no inventor but knows of numbers who have met with dead failure in what they tried; and still he never takes the trouble to find out what the cause was, which might be of the utmost importance to himself, saving him both time and expense. But no; he works on blindly until he gets into difficulties, and then, when compelled, he takes things easier.

That the world has been greatly benefited by the labors of inventors there can be no doubt; neither can there be any doubt that inventors, with few exceptions, have been losers; the reasons for which we will try to show further on.

WRONG IDEAS OF MACHINERY.

Some look upon machinery, which is the result of invention, as a curse rather than a blessing to mankind. This must be owing to their extreme ignorance or want of thought; and a strange inconsistency with these people is that they are ever ready to call in the aid of machinery where it will benefit themselves.

It is true that we might be as happy with much less machinery than we have; but it is impossible to suppose we could get along without a certain amount of it. The very animals, by reason of their superior strength, would not allow us to live upon the earth unless we had instruments to destroy them; and these weapons are nothing else, many of them, than machines or parts of machines.

The question then is, what kind of machines must we lay aside, or what kind of work must not be done by machinery?

Some good men claim that it would be better to have all work done by hand, and there would be much more peace and less dull times if we could banish machinery altogether. It is evident some machinery is needed in the present state of civilization. There are many things we need that cannot be made by hand; or, if they can, it is only very imperfectly and on a small scale. The clothes we wear could not be

procured without machinery. Let a man try to weave a piece of cloth — even the coarsest — without a loom, and see what sorry work he will make of it. Let him try to make a piece of wood or iron round without a lathe, and see how far he will fall short. We have, then, no argument against machinery, but the question is about the justness of patent laws, which presupposes it is right and proper to give the man who invents a new machine the sole right to make and sell the same for the space of seventeen years, and allow him to charge his own price for the same.

There is not the least need of patent laws; and they do the inventor more harm than good, when we consider their general effects, and not the odd one who derives advantage from them.

What is in reality a machine is very difficult for some to understand. Nothing with them is deserving of this title unless it is somewhat complicated, and contains wheels, levers, cranks, etc., capable of moving when set in a frame. They will not admit a plough is a machine; for it seems to have none of these things. The plough in its simplest form is a machine, and must have been an invention.

Nearly everything that is used as a machine must also have been an invention. The only exceptions are things that grow, or which we meet with as the productions of nature. Even these require a certain amount of invention to find out the best uses to which they may be applied. The universe itself, with its many systems, is an invention of the Divine Mind, or, more properly speaking, a creation of God; for God can invent nothing, because invention supposes a certain ignorance, and means finding out what was previously unknown. God, being omniscient, can find out nothing, knowing all things and events before they occur; all science and secrets lying open to Him.

What corresponds to the faculty of invention in man is creation with God, which latter power is as far above invention as it is possible to imagine. Man can create nothing; he can merely combine and imitate; though we often apply the term creation to some of his productions to denote the highest order of invention or his greatest achievements in the same.

A mechanical invention may be defined as something thought out by the mind and afterwards embodied in some

material substance in order to perform work or have the power of motion when force is suitably applied to it. When the advocates of machinery cite the plough as a machine they are laughed at by their opponents. But if the simple plough will not convince them we can recommend to them the gang and other ploughs which have many more parts than some things they are willing to acknowledge are machines.

It was not so easy a matter as may now be supposed to think of and substitute the plough for the spade. There is quite a perceptible difference in the manner of breaking the ground with the one and the other.

This difference of doing things by hand and with machine is much greater in other kinds of labor than even here.

The readiness to see this difference is nearly always the secret that leads to the invention itself, and seems to be the peculiar trait that distinguishes the inventor from all others. When one sets himself to work out a machine for a particular purpose he first considers how the thing is done by hand, and how he can substitute pieces of iron or other material to perform the manipulation. As the most skilful mechanic cannot approach, in his work, the complicated movements of the human hand and arm, he will not strive to imitate them servilely, but get substitutes for them or manage to have the work done in some other way.

Some get, as it were, a faint idea of an improvement, or that an advantage will be obtained by applying what is already in use to a new purpose, but, not being able to make allowance for the change in conditions, they fall into many errors, yet, by force of perseverance, sometimes succeed. It is astonishing what great mistakes those make who are highly esteemed for their inventive ability. If all that passed through the mind of him who has worked any considerable time on an invention could be told, it would disclose a mass of sound and false judgments, the latter often outnumbering the former. We are informed that the man who invented the propeller for steamboats (taking his idea from the common screw no doubt) could not understand, at first, how to modify the same, to adapt it in the best manner to work in water; thinking, if there were not so many threads needed, a fair proportion should be retained. It was only after repeated failures and much reluctance that he could prevail on himself to so reduce the threads, so to

speaking, as to leave nothing finally but portions of one thread; more properly, parts only of a flange inclined so as to catch the water;—this incline being the only thing that could be said to be utilized of the former idea of the screw.

The windmill already in use might have furnished the whole idea of the propeller nearly complete. It possessing the revolving shaft, and, in some cases, few enough arms, all that was needed was to reduce these arms to proper size, and make both arms and shaft of iron. There are many other instances similar to this, where, instead of taking the thing nearest to what our improvement or machine is to be, and working on it with whatever new idea we may have, through some oversight we go further back and make unnecessary trouble for ourselves.

Of course we shall get no credit for doing so, as others, at first sight, will tell us how much it is like what we should have seen before.

Though there is much time lost in not knowing how nearly our invention resembles something in use long before, the greatest error inventors fall into in this regard is just the opposite; that is, imitating what we see and copying too closely common arrangements and manner of doing things. These two extremes of inventors show to what an alarming extent they differ, as if they followed no order in their work. One reason why inventors make so many mistakes is that the greater number of us do not take a broad enough view of the matter, and proceed calmly and slowly in the beginning. On the contrary, we allow our minds to be totally absorbed with first impressions and the labor of putting them into shape, as if we had some assurance that there was no other way of doing the same thing, and could be no other. We think we have the idea in the most perfect understanding, and, so convinced, we cannot look upon any other arrangement for doing the same thing but with disfavor.

The next step we take is to give proofs that none other but ours possess so many advantages. In proportion as we multiply arguments in support of our assertions we find reasons for condemning the productions of others. Nothing but the failure of our own, and the success of our rivals, will ever convince us of the false arguments we employed and were deceived by.

The reason for these peculiarities of inventors is that most

of us are very poorly informed, our acquaintance with matters and things being confined within very narrow limits. It may sound harsh to say that inventors, on the whole, are the most ignorant of the population, having nothing to boast of in the way of accomplishments but a little handiness or dexterity in the use of tools. Seldom can we lay claim to the honor of having mastered a trade. Much more, indeed, we might know about our trades if we were not so greatly distracted with planning and inventing.

A thorough mechanic knows — what one in a hundred inventors does not — that there is a great deal of labor needed to perfect a machine; and this labor, even where he has an inventive turn of mind, prevents him from making the attempt; for he says to himself, I cannot afford it; while the one who is not a mechanic thinks all or the greater part of the difficulty is over when he has got hold of the mere idea. The language of inventors is, I could take a tree from the woods and make my contrivance out of it. Perhaps he could; but it is more likely he could not. This shows how lightly they value mechanical skill, which is really one of the most sterling things in the world, and has by no means been exhausted in the perfection already attained. There are many things that mechanics cannot accomplish which seem possible to others. One great advantage they enjoy over those who have no trade is the knowledge of what can and what cannot be done in their line. This saves them a great deal of time which the unskilled waste by attempting the impossible.

One of the surest signs that an inventor is wrong is when he can meet and explain away all objections; for there is always some imperfection about every machine; and when he is able to refute every charge, and won't admit any deficiencies, it shows he is becoming more skilled in argument than in mechanics.

If it sounds harsh to say that inventors are among the most ignorant, it is not difficult to prove it. There are many men who, though not mechanics, nor any better posted than those who attempt to be inventors, unless we consider their greater amount of common sense as such, still will not become inventors, understanding, through consciousness of their own deficiencies, inventing to be too difficult, and the risks too great, which many an inventor does not find out till after years of labor, trouble,

and expense; which shows that they were the wiser and the inventors the more ignorant.

By this stricture on inventors we do not wish to intimate that all inventors should be denounced and despised. All we wish to show by it is that, as in every other branch of human activity, there are many who not only bring no credit to their professions but are rather a dishonor and impediment to them. The same thing, we hold, occurs in what may be called the inventor's profession.

Thus it is evident there are many quack doctors, many poor lawyers, many miserable artists, many poor singers, and so on; all of whom, however, expect some recognition from the public.

Of inventors the number of poor ones is altogether out of proportion large as compared with other avocations. Others, when they do not stand high in what they profess, may at least be of some benefit and do much good in their way.

An indifferent singer may find an audience whose taste for music has been so little cultivated that they may be highly pleased with his vocal efforts, not perceiving the defects.

It is well known some people derive more real enjoyment from the strains of a poor singer than from the warblings of a prima donna; and to them a "Come all ye" is perfectly entrancing, where an opera would be tedious.

A poor doctor may make himself eminently useful if he does not attempt things beyond his knowledge; for there is such a multiplicity of cases of daily occurrence requiring treatment but little or no skill.

A poor lawyer may be of more benefit than a good one if he is only honest; for he can show his clients the better way in the majority of cases is not to go to law at all. Even a shoemaker who is a poor workman can do many a useful job, if unable to make a good shoe. But what can a poor inventor hope for? Nothing but what is good will be accepted from him. It must serve some useful purpose, otherwise it fails and is bad; and it must be new and something no one ever brought out before, otherwise he is an imitator and not an inventor. If not an imitator he gets no credit, as the thing was in existence before. He has undertaken the hardest and most difficult employment known. Those who learn trades have their ingenuity excessively strained only while learning them. The inventor is on the strain all the time if he fulfils the conditions of his avocation.

This to us is an impossibility; we never knew of such a one. At most, a few hundreds or dozens are all the most prolific have produced; and when we apply to these the test of usefulness, which is a prime one, their number must be greatly reduced.

Those who have been highly honored for their achievements in inventing have given us two or three of real merit; and, as if their power was then exhausted, cease from further effort, or, if they continue, it is only labor thrown away.

This may serve to show the unreasonableness, not to say folly, of those who think they can invent contrivances of high merit without displaying or being conscious of possessing more than the ordinary inventive ability.

What, we would ask, is the position of the poor inventor? If his machine is not a success not once in a thousand times can it be used for anything else, no matter how well he may have made it, or surpassed his own expectations. Though it may have cost him years of labor, and, considering his means, an immense amount of money, he will be able to sell it only for junk. The poor inventor, then, is the last of workers both for himself and the public, and the least to be thought of and encouraged.

Inventing has a very enervating and demoralizing effect on those who follow it for any considerable time. It renders them almost unfit, like their machines, for anything else; and unless they produce something that brings them compensation, they will finally finish up in the almshouse or lunatic asylum.

Their mind is so taken off from any regular employment it is little they accomplish in the line of actual work; for close, urgent, and determined attention is necessary to produce a fair amount of work; and where this is wanting nothing else will supply its place.

One's strength is often found to go like his attention, so that he feels as if he could not continue to labor any considerable time as he used to do before he took to inventing, and this leaves many in the end broken wrecks, seemingly diseased, but in reality only run down and suffering from the inventor's disease, — that of planning and contriving.

It is very wearing on one's physical powers to be always thinking on one particular thing until it is solved, and then taking up another without even allowing one's mind a rest.

With some there are several problems engaging them at once; and relief from one is only more opportunity for another, so that such are kept in a worry the whole time. No wonder, then, if they become weak and lose what is the only true joy of life, good health.

Where a man is continually being favored with a new idea, and silly enough not to be able to see its worthlessness or weak points, his doom is sealed as far as this world is concerned, and nothing but a special providence will ever set him right again.

INVENTORS WHO MISTAKE THEIR VOCATION.

Wendell Phillips facetiously says: "The American baby begins to invent sitting in its cradle when it is six months old, and takes out a patent as soon as possible afterwards."

If this were true we could hardly have a larger number of inventors. To be certain of it we have only to read the list of patents issued weekly, and take into account the still larger number who have devoted much time and study to new contrivances, but who have never gone so far as to make an application for a patent, because unable to bear the expense, they have not sufficient confidence in their creations, lack the will to make the necessary sacrifices, or are not sufficiently allured by the glory and profits supposed to be realizable.

Everybody, to a certain extent, is an inventor. Invention is one of man's natural gifts, and never deserts him long as he lives and has the enjoyment of his faculties. Even insane people do not always lose it with the derangement of their intellects, but retain it unimpaired.

Some hold that all inventors are insane, otherwise they would not act so foolishly and give so much consideration to absurd schemes, and, where not absurd in the majority of cases, sure to cost them more than they will repay.

Though all are endowed with the gift of invention there is a class distinguished by the title of inventors, from the fact they endeavor to embody certain conceptions in some material substance or process, and thus bring about results before attained in some other way, or not at all.

Their name is legion, and a very numerous legion they are. We meet them in every walk of life. There is no profession or calling, however exalted, that can restrain cer-

tain of its members from descending to mere mechanics, and entering the lists as contestants for patent honors and rewards.

Professional men who have little knowledge of machines or their operation, as if by way of amusement, and to show how well acquainted they are with common affairs, and how great things they could accomplish in this line if they were not hampered by a profession, strike off an invention and give it great notoriety by advertising before it proves an actual success; all of which is comparatively easy, as they can readily express their ideas and afford to spend a few dollars giving it publicity in view of the great reward it will return, at the same time leaving the real difficult part to the mechanic whom they think they can hire for a small sum to give the thing practical shape or set right whatever is wrong about it.

Their self-confidence is astonishing and amusing to those who understand the actual difficulties. It seems they think all they have to do to show that their power of invention is as far above the ordinary mechanic's as their literary attainments is to give any device a passing thought or short study. When they come to learn what they thought perfected in their own superior minds was not carefully considered, and the man who had nothing to do but the mere mechanical part is unable to carry out their crude notions,—or when worked out the thing produced is not what they expected,—then for the first time they learn that mechanical inventions require more thought and study than they were aware of.

The fact is, they expected the man they hired to do the work was also to do the inventing, and only charge the price of construction, throwing in the inventing for getting the job. They learn, also, that designing and perfecting even simple machines requires a special training, and literary accomplishments are no sure guarantee to success either in the one or the other.

Thus we find a Rev. Mr. Murray inventing a buckboard wagon; a Dr. Hall a treadle to save the labor of women who run sewing-machines; another doctor, a shoe-stretcher to make up for the defects of the shoemaker, and prevent the formation of corns.

A professional man invents an invalid bed, and assigns his right to an hospital, not being aware his bed has been

already patented, and his gift of no value to the donee, to say nothing of its possible mechanical defects.

In spite of all these professional inventions people are still troubled with corns; women find it as hard as ever to run sewing-machines; and very few sick are helped by the invalid bed. Such men ought to be content with the high fees they charge, and give their entire attention to their professions; for there is more than enough for them to do there.

Though they want to make it appear that it is the good of suffering humanity that actuates them, it is oftener the good of their own pockets that is the source of their inspiration; thinking it is such an easy matter to compete with the illiterate workman on his own ground. It does him very little harm, as they are scarcely ever successful, and only serves to show clearly their impudence in intruding where they had not the necessary qualification.

In playing the *rôle* of inventors they render themselves more ridiculous than the uneducated, for they are supposed to have more experience, and find work enough in their callings to keep them busy all their lives, and inventing enough of a higher order, without degrading themselves to the drudgery of laboring to find out what a new arrangement of wheels, levers, pulleys, cranks, fulcrums, and inclined planes may result in.

THE UNITED STATES THE HOME OF INVENTORS.

There is no country in which inventors are so numerous as the United States. This is owing to several causes, but principally to the ease and comparative slight cost of obtaining letters-patent. The fact of having such a large extent of territory, much of it but thinly inhabited, and the approximation of our institutions to a republican form of government, which gives us more freedom to carry out individual notions, contribute greatly, if not most powerfully, to the development of inventions. The greatest of all incentives that actuate inventors is the profit hoped to be realized, and the glory that will redound to them from the productions of their genius.

We cannot suppose that our people are any more desirous of gain and glory than those of other nations, and therefore, it must be the difference in the laws that has to account for

the much greater interest taken in inventions with us. Other nations have their patent fees so high and their conditions so exacting that it is more discouraging to secure rights to one's productions in this line.

We do not, indeed, find fault with a government for having bad patent laws; for we believe the better way would be to have none at all than such as they are at present, even in their most advanced state.

It seems to us there can be no such thing as just patent laws; and if there could their execution would be more expensive than they would be worth. The very nature of things involved, and the cupidity of mankind, render it impossible for a government to frame laws regulating justly the title to property in ideas. This is what a patent is, a claim that an idea is yours because you first thought of and gave it material shape. And the government rests its right on this to secure to you the enjoyment of the same for a term of years.

But how is a government going to know you are the first who thought of it? How is it going to protect you if you are the first? What right has it to preclude others from using the same thing, who thought it out without any knowledge of yours? A patent is generally of no account that has not had a great deal of litigation wasted on it. Though the new inventor thinks himself secure when he has obtained his patent, he knows nothing how greatly that grant of the government will be abused when it gets into the courts; as if the official sanction was of no value whatever.

If it is just to secure to the individual the possession of his property, whatever the nature of that property is, what justice is there in rendering a whole nation tributary to an individual or company simply because they have been a little in advance of others in bringing out some device? The authorities, too, suppose the invention is to be a public benefit, and lay no restriction on the patentee as to the price he shall charge, — thinking, no doubt, the demand will adjust that equitably, which it scarcely ever does and never in any of the great patents which rob the country of more than they ever compensate for. The proprietor of the Singer sewing-machines, it is estimated, made from it sixteen million dollars; and he was only one of three or four about equally as successful. We cannot admit the sewing-machine was worth this great amount to the country, especially since it might

have been invented if there was no patent law to encourage them.

The only plausible reason that can be assigned for granting patents is that the things patented would never be thought of if the inventors were not encouraged by laws for that purpose, and the world would be the loser. But there is danger from too much encouragement when there is no proviso to counteract it.

The bill for strengthening the public credit might seem harmless if we did not know the public credit was already solid, and that law only favorable to the money power. So, when there exists encouragement enough for inventors without laws for that purpose, they are not needed, but absolutely injurious.

Though it seems reasonable to suppose if a certain inventor had not appeared at a particular time and produced his discovery a generation or more would elapse before any one else would think of the same thing, and the world would have to get along without it for that space of time.

If such cases occur they are very few. It is evident that nearly all the great inventions were being perfected at the same time by different parties, and in places widely separated. Several persons were making rapid strides towards rendering the locomotive a useful machine at the same time.

Two, at least lay claim to the honor of inventing the safety-lamp. Howe's and Singer's friends assert each of them was the first to make a practical sewing-machine. Who the first inventor of the telephone was it is hard to say as there are more claimants than one.

We, therefore, cannot admit the government has a just right to give an inventor the power to levy on the people an immense sum because it takes it as granted that no one else would have made the discovery. This is assuming too much, and resembles too closely the prepossessions of tyrants and tyranny.

Many projectors of small inventions, through their own ignorance, are lured on to sacrifice much valuable time so as to gain the benefits of the patent law, which they imagine will be an advantage to them, and find the more they trust it the more they lose. But those whose inventions are considerable, and which it takes much capital and many years

to perfect, can hardly be so foolish as to depend on mere patent rights for compensation.

Is it just, then, to uphold laws which, it is evident, are a source of much deception to the majority of inventors? — for few really understand the nature of patent laws, and how very unreliable they are. It is an acknowledged duty of a government to protect its subjects, and this it does in many ways. Ostensibly, and to some extent effectually, it protects the weak against the attacks of the strong, the simple from the cunning, the honest man from the rogue, the buyer from the seller, and the seller from the buyer.

Lotteries are put under the ban for the reason that too many would be deceived in giving their money with hope of gaining the prize.

Up to the present we have heard very little said against the evil tendencies of patent laws, though one in any way acquainted with the pernicious influence they exert over a great number of the people cannot fail to see that they deserve to be repealed as much as enactments favorable to lotteries.

Those who suffer from them take it in good part. If they are men who have not succeeded they attribute their failure to their own mistakes, the treachery of the lawyers, or the villanous pirates who have stolen their inventions. They never think of attaching any blame to the law that first induced them to take up inventions.

If they are those who are debarred from making any article because patented, or have to pay an enormous price for the same, they submit through their reverence for law, which shows them if their rights are somewhat infringed, those also of the whole nation are, and they have no just grounds for complaint. If the price is large others cannot get it cheaper, so their business interests will not suffer.

It is a very commendable trait of national character in our citizens to have this reverence for law; but it has its limits, like everything else.

When it is a question that affects the well-being of the whole nation reverence for law is then the pillar that supports it. But when a nation's rights are invaded, and bad laws enacted by cunning men, who count on this reverence of law to carry out their own schemes, if they give such the same homage, it has degenerated into superstition and idolatry.

If we pay taxes sufficient to maintain courts, schools, highways, almshouses, prisons, asylums, hospitals, etc., and to pay the salaries of those who take care of them, we have done our duty in this line, and should not be asked to make any further contribution; when we are again called upon to give part of our earnings to private individuals because they have succeeded in getting a monopoly of any article which we need, beyond what is a fair price, it is clearly wrong.

We do not look upon the multiplicity of inventions, then as a sure sign of a nation's stability or greatness.

But a readiness to adopt them, have them appear when there is a necessity, and find advocates outside the Shylock class to forward them, is, we think, a certain indication we have not become a nation of abject slaves who take no interest in their own welfare.

What must strike every one very forcibly who perceives it, is the difference existing between many things that should be nearly alike in our own and other countries, and which can by no means be accounted for by the difference in the patent laws, but rather in our other laws. These little conveniences of life, found in every household with us, are wanting to a great degree at the other side of the Atlantic. Many of these, though not absolutely indispensable, yet so nearly so, and even demanded by common decency, it seems hard to understand how they get along without them; for there must be very strong and inexorable conditions to their acquisition to put them beyond the reach of those who need them.

The evil of monarchy is not that it has an absolute head, controlling the whole nation and taking a vast amount of the people's money in unnecessary taxes; its direful influence is in the aristocracy it fosters and class distinction it insists upon; this distinction, depending not on personal merit, which should be its only foundation, but the favor of the court, or the amount of one's riches, thus demoralizing its subjects by making one part slaves to the other unreasonably.

Nothing has led to so great changes, tending to abolish aristocracy, as new inventions, and for this reason alone they ought to be encouraged by those who perceive its baneful effects, but not necessarily by the aid of patent laws, which, as we have already said, we consider more injurious than

beneficial. There may have been a time when there was a need for patent laws; if there was, it has passed by and they are not now a benefit to the people.

The minds of inventors, like all others in aristocratic countries, are insensibly led to give their attention to what may flatter or be acceptable to the higher classes, relying on their patronage for reward, and not on its general use or acceptance by the public, as with us.

The extent to which this servility is carried is one reason why useful inventions are so slowly adopted where they are already known. If any contrivance is likely to improve the condition of the laboring classes in such countries, before it gets the approbation of their masters, they must be satisfied it is not going to render them less dependent, or less entirely their slaves. The common people, who produce the greater number of useful inventions, are so poor, under monarchies, that they can hardly think of inventing, on account of the expense it would entail.

Their whole time is hardly sufficient to make out a bare living, by reason of having to provide for a landlord whose tastes are very expensive, or a government who makes their class contribute the greater amount of its support.

It is here opponents of machinery ought to turn when they claim it cuts down the wages of the working-man. What seemed to us very noticeable in Ireland was the great lack of machinery of all kinds. From this it ought to follow, if our opponents are right, wages would be high; but the very opposite was the case.

Little or no machinery, and wages so low it was hard to tell how men could live, or how it ever came to pass so small a sum could be offered for the labor of the working-man, while other labor should be paid as much as we pay and some of it a great deal higher. Many servants who work about hotels and drive carriages get absolutely nothing, but depend on the charity of those who travel to get any compensation for their labor, which fact is revolting in the extreme to our sense of independence.

This is only another contrivance of the aristocracy to gain flattery and assert their superiority wherever they go. Giving money in this way is no sign he who does so is an honest man, or very liberal; for he is not obliged to give it, and does so as it were through compassion and pure benevolence for mankind. The beauty of giving, and the virtuous

action it appears to be, is obscured when we consider the noble lord who spends a few shillings in "tipping," to get that few shillings may have sent a man with his family to die on the highway, and pulled down the house which his own hands had built.

Many little devices so convenient to the public are unknown in monarchical nations; for the aim and object of such government is to benefit, it seems, the few, and pay little heed to the majority, only as far as schemes of robbing them are concerned. How people could travel without the baggage-check would seem difficult to an American, and still in Europe its advantages are unknown. Corporations there are very cautious in putting themselves under obligations to the public; in fact, the more they can tyrannize over them, their foul instincts tell them the nearer they resemble royalty.

Anything that may be pleasing to my lord is laboriously sought out and kept for his convenience. They are very reluctant to give the commonalty any advantages they can withhold; for it might make them forget a little they were mere slaves.

When a lord travels he has attendants enough to look after his property; the check would be of little benefit; and this is a strong reason why it should not be adopted. The extent to which distrust is shown to the public is also another evidence that monarchies are not disposed to promote the welfare of the multitude. They are very slow to give checks and receipts, in order to keep the balance of irresponsibility on their own side; while we give the poor man the same security in our dealings as the rich.

Whatever may be said against our railways, it cannot be denied they show a willingness and take much pains to render the traveller comfortable, be he rich or poor.

The direful influence of aristocracy on inventions both mechanical and political can be clearly traced in every country where it holds sway; and if the United States is ahead of all others, and, though comparatively a new country, has astonished and enriched the world with many of its most valuable inventions, the cause of this is due to our exemption from the thralldom borne by others who classify men contrary to the rules laid down by Nature.

The blighting sway of a ruling class permeates every thing in these countries; even in the very church we find

sometimes divided off to show conspicuously there are different grades, and that during the short time of divine worship the aristocrats cannot dispense with the assertion of their superiority.

If any one of the tenants of an estate makes a discovery, his first thought is, "How will my landlord look upon it; will he give it his encouragement or not?" Here our question is, What will the public think of it? And we act more naturally, for we calculate on the impression it will make on the people, and how they will receive it. They are the ones who buy and consume the greatest amount of whatever is produced, except a few articles of luxury which are too expensive for any one, and not needed by them.

We honor the individual, no matter how low down he may be in social standing, if he shows he possesses merit. But we are fast failing in whatever display of equality was justly ours, and growing in love of the perverted ways of our transatlantic cousins.

Many of our patentees, when they make a little money, discover an inclination to join the aristocrats in all their pernicious follies.

The very country and government that would give them no protection for their invention they are mean enough to admire, when rewarded by their own country for the same.

One must travel and see for himself, to be convinced of the great difference that exists between a monarchy and our government, where we enjoy comparative freedom.

There, by some means or other, the wages of the working classes have been cut down to the lowest point. Some assert this is owing to one portion of the people taking all the land, and charging the rest rent for it, which enables them to live in idleness, and substitute pleasures and amusements for labor.

But, whatever the cause, the result is deplorable in the poverty, suffering, and misery it entails on the one side, and the luxury, extravagance, and rascality on the other.

Not only have we seen machinery scarce, but often the tools of the worker the poorest excuses for implements to lighten labor; frequently labor is done without any tools whatever.

We have seen in Ireland men making hay with their hands, forks were so scarce. It would be well if it was only hay they had to handle. In Egypt they are compelled

to clean out canals with their bare hands, having neither spades nor shovels to aid them.

And at what a loss? Besides the much less amount of work they can perform, it must be more laborious and discouraging.

In Ireland we never saw hay put into barns. When it was made in the field it was built into great ricks out-doors, with as much labor as would suffice to build a barn to hold it. They say barns cost too much. But surely barns would pay for themselves in a few years if labor was worth anything. This seems to be the explanation: labor is so poorly paid it is worth next to nothing, therefore no need of economizing it. There might be some excuse for laborers' wages being so low if all labor was proportionally low, but this is not the case. The only work so extremely poorly paid is that done by mechanics and unskilled laborers.

All other kinds are generally better paid than in the United States. The price paid for work done by horses brings fully as much as here, but it is easy to account for this, for it is the well-to-do folks who own the horses.

The fees of doctors and lawyers we have seen higher than we pay.

How such a subjection of the working-man was ever attained is hard to make out. When we were paying men two dollars a day, we saw them working in Ireland for twenty-five cents a day, — of very long hours. Some do not wonder at this, for they say other things are in proportion; which is entirely false. The twenty-five cents a strong man could earn would purchase no more of the necessaries of life than here. The question, then, is, how can a man live and support a family on this small sum? It is beyond our power to answer, as every one knows it is an impossibility. What makes it still worse is, small though this price be, work is not obtainable at it anything like every day. From this we may understand what a great calamity it would be to the United States to have our tariff so low as to allow the labor of such men to reach our markets; for it would reduce the wages of the laborers here to nearly the same price they work for, and we would be obliged to put up with the same miserable surroundings. Surely such a state of things cannot have been produced by inventions and machinery. Where we have seen this there is so little

machinery it did not seem to be in any way obstructive to labor.

The hand-loom is there in use. The people, such as have land, raise their own flax, and do everything to make it into linen, except the weaving, which is done by a hand-loom in a neighboring town.

That there is considerable difference in the manner of doing things here and in European countries is evident. And affairs here are more in favor of the working-classes. If anything to the contrary is beginning to show itself it must be because we are falling into the ways of those who love and admire aristocracy.

OUR GOVERNMENT THE WORK OF INVENTORS AND DISCOVERERS.

Considering the conditions of the people, in the various countries, we are led to inquire, what was it that gave us the peculiar advantages we enjoy? As we have said, it must be owing to our laws and institutions.

But these must have had a particular origin, for they were once purely English. We can find no solution to this question only that our nation originated from a discovery made by the men who controlled its destinies at the time it discarded England, and worked it out as best they knew, according to the measure in which they understood it. This discovery was nothing else than that "all men are created equal;" the meaning of which, though plain, has been misinterpreted by many. They did not wish to assert all are born with the same powers or gifts; or that they should not obey those in authority; but that they come into the world possessed of certain rights that cannot justly be taken from them or infringed upon, the principal of which are life, liberty, and the pursuit of happiness. Short though this sentence is, there is none other that causes so much discussion regarding life. Neither is it at all an easy matter, when admitted, to so regulate things that each may be entitled to these privileges. For too many claim exemptions from the line of conduct it suggests, when they get the opportunity, which, if granted, works injury to others. There is in our mind a suspicion that patent laws, in some manner, infringe these conditions; though this is not our greatest objection to them, but because they are a source of

deception and loss to many. The wonder here, however, is the same as in other discoveries and inventions, that some one did not think of it before. But though some undoubtedly thought of and were convinced of it previously, and to some measure worked upon it, it stands forth to-day in all the sublimity of an original conception. Because it was looked upon by our forefathers not as a mere theoretical ornament, but as something which, if reduced to practice, would produce, as subsequent events proved, most beneficial results.

It leaves no lurking-place for tyranny, whether in the shape of grinding monopolies or despotic rulers; for tyrants can flourish only by encroaching on the liberties of the people.

The great success of our idea of government, though having too many monarchical forms in its make-up, and, as in retaining slaves, annulling, practically, the very strongest and most commendable of its tenets, warrants us in placing those men who established it among the greatest discoverers and inventors the world has ever produced. It certainly was a stupendous experiment to attempt and carry out, while raged the fierce contest against it waged by enemies who not only did not wish to steal the new idea, but employed their best efforts to prevent the possibility of its getting a fair trial, or any trial at all, at the hands of its fortunate discoverers. That must have been a noble inspiration, we may well call it divine, that led our ancestors into the secret that all men were created equal. It is true it was known before, and to some extent reduced to practice; but none gave it such conspicuous importance, or insisted so rigidly on its being embodied in legislation.

Herein it resembles what has taken place with many mechanical discoveries. Printing was practised in China, in very early times, on a small scale, by the employment of hand-stamps. The same also were used in Pompeii. The electric telegraph was used before Morse's time, rather as a curiosity though, and he deserves the credit of making it serve a most useful purpose.

Therefore it does not at all detract from the honor due to Washington, Jefferson, and the others, that what they may claim as a discovery was known before their time; for they added what was wanting, or perceived its full significance and made it subservient, like Morse the telegraph, to the promotion of great results. But, as in all other inventions

of great importance, which are never so perfect in their first conceptions that defects will not appear in time, which could not be foreseen till subjected to the varying conditions which alone can reveal them; so in the formation of our government many defects were overlooked and remain to this day, because, as is most commonly the case, we copied too closely what we found already in existence.

They were right on the main points, but the imperfections of our Constitution escaped their notice, or were beyond their power to provide against, but which have been so manipulated by unscrupulous men as to almost nullify their good intentions, and which will eventually do so, if not prevented, and thus bring us back to a worse tyranny than we were freed from. To-day we are almost as much oppressed by our own bad laws, as we were a hundred years ago by those of England.

Instead of four cents a pound tax on tea, we have to pay taxes on a large number of things, on some of them fully fifty per cent.

Wages are low and labor scarce; giant monopolies growing more defiant every day, prisons and poor-houses increasing the number of their inmates, and political corruption keeping pace with these aggregations.

A strong proof of the bad spirit that actuates public men is the reluctance they display to have the national debt paid off, and the flimsy arguments they put forth. One of these is that part of the debt ought to be reserved for posterity to be encumbered with; that they may be compelled to pay for the liberty it is hoped they will enjoy. This is blasphemy of the darkest hue against the nation. Must our children be called upon to sanctify with their sweat and labor the treachery of a few Shylocks, who compelled the government in its hour of danger to repudiate its own money, and thus enormously increased the price of gold? Will it not be sufficient that their parents have bowed in humble submission to the iniquity, and paid a debt more than twice over, which was many-fold greater than it possibly could be but for barefaced perfidy?

The peculiar circumstances of our ancestors were also favorable to bringing about a mode of thought that led them step by step up to the plane where they perceived all men's statue of right was the same.

No matter how noble the personage who came over in the

"Mayflower" or other vessel, he was obliged to take part in the rough and manly work as well as the others, and, however he might endeavor to shirk it, a considerable share unavoidably fell to his lot on account of the obligation he lay under to supply his own necessities.

This opened the eyes of many a *gentleman* to the fact that, after all, he was not so much superior to his fellows as his European training had made him suppose.

Thus, having to bear with patience, privations, and hard work, they owed what they became possessed of to neither court favor nor kingly influence, but to their own muscles, and the Lord's inheritance. To give up, then, a large part of this to support, in luxurious ease, a class that had contributed nothing to its production, and who demanded it not as a gift but an obligation, was to them so evidently iniquitous, that they could not degrade themselves so far as to submit to such unqualified tyranny.

Their sufferings, therefore, we must conclude, had such a moralizing effect that it prevented them from seeking out false arguments to controvert the highest article of their faith, that all men are created equal; but prepared them to make the greatest sacrifices to support it.

EVERY ONE AN INVENTOR. — PERPETUAL MOTION.

Though the hope of pecuniary reward is what inventors generally work for, it cannot be denied that there are those who have such a love for the offspring of their brain that they will be fully satisfied if such offspring maintain their existence in the favor of the public with very little if any other reward for the parents. What proportion these bear to the rest we cannot say, but that they are quite numerous is easy to understand; and they are the men who make the really great inventions and care nothing for patent laws.

As all men are endowed with the gift of invention, there is, consequently, no one who does not exercise it in his daily actions.

What else is it but invention that instructs us how to adapt the means to the end. From childhood to old age we are all obliged to be inventors in our own affairs, to a very considerable degree.

There does not, therefore, so much glory attach to the title of inventor as some suppose, and there is no need of feeling

proud of it, before one has invented something of decided importance. The amount of time wasted on an invention has nothing to do with its merit, but may be, as it often is, a proof of one's folly.

What others have accomplished and bequeathed to posterity is justly very highly prized and recommended; but that it is always best to waste much time in making one's self acquainted with it is questionable. A man's own inventive faculty will often do more for him, when there is a necessity, than he could learn from the researches of others; but this is especially confined to things of minor importance and not at all to the great inventions. But then it is the little things that make all the troubles, as about nine-tenths of all the patents are small things.

The inventor proper, whom everybody takes an interest in, is he who brings forth a device that is successful, and accomplishes the results sought after; no matter what amount of labor it cost him, or whether the idea came perfect to his mind in a dream.

It is in this lies the great difficulty as to what would be a just compensation for the pains and labor incurred; as some perfect their inventions only after years of study and toil, while others do it with apparently little of either.

And this is the reason a government can hardly assume the responsibility of rewarding those who bring out inventions, as a great many think it ought, seeing how great is the expense of getting up new devices and how the majority of inventors are at a heavy loss, while some of the most oppressive monopolies are built up from the few successful patents when they fall, as most invariably they do, into the hands of capitalists, who are encouraged by their patent rights to charge the highest price possible and continue it long after the life of the patent has expired.

The way to remedy all the evils arising from patents, it seems, would be for the government to purchase all the successful ones that have proved to be of real value to the public, and make them common property.

Owners of such would hardly care whether the government purchased them or not as long as patent laws exist; for, before they reach such a state the inventor must have already gone through with all that is difficult, and the expense borne by himself or others. All such as required the condition of pronounced utility before being taken up

by the State would, as now, be taken by others who saw their merit.

It would be a great loss to the tax-payers if all inventions were bought up by the State and the proprietors suitably rewarded for the study and labor expended upon them if that could by any means be ascertained; for the greatest number would be found not to be worth the material consumed in their construction, to say nothing of the other great expenses.

Besides, what a great encouragement it would be to every crazy dreamer to work hard and think much on devices that would evidently be of no utility when completed? To the inventor sure of being rewarded by the government, it would be of little consequence whether his inventions proved useful or not, while it would afford him a grand opportunity of indulging in a morbid sort of pride, which is another species of disease that afflicts inventors characterized by an obstinacy that sets at defiance all obstacles for the mere pleasure of carrying out its own pet plans and asserting it can do what others maintain it cannot.

What an army of perpetual-motion seekers would appear if this security was held out to them when they are so numerous at present, and everything to discourage and dissuade them from such pursuit!

As to perpetual motion, scientific men inform us it has been proved beyond a doubt such a thing is an impossibility, and the time lost that is bestowed upon it.

But inventors do not generally examine what has been done before them, or what are the opinions of others, unless such information comes to them in such a manner as to be unavoidable.

Commonly the way a man becomes an inventor is this: he has a desire to get more money, and, if he has a trade, he is not satisfied with the wages he can earn at it, and looks about him to see how he can increase his profits. He has heard and read of the great sums made by a few on what appear very simple devices, but makes no count of the large number who come to grief. He begins to examine then if there is nothing he can invent or improve upon, and reap a similar reward.

At first he does not actually give up his employment, but does a great deal of silent thinking, and it may take years

before he meets with something that may be, he thinks, safely attempted. However reckless inventors afterwards act they always in the beginning carry with them a share of caution that keeps them out of trouble for a considerable time.

By continued study they learn a good deal about the construction of machines, and find themselves in time better acquainted therewith than many others who follow not the same line of thought. This gives them confidence, which soon ripens into conviction that their inventive powers are superior to others; and accordingly they plunge into the actual work of getting up the particular thing they have determined upon. It would not be fair to say all inventors belong to this class, but they are by far the majority who have made the Patent Office self-sustaining, and enabled it to lay a good surplus away in the treasury.

The others who invent are those who have a natural leaning towards mechanics, and would produce nearly the same number of inventions if there never had been a Patent Office.

In spite of the condemnation bestowed upon perpetual-motion experimenters it is constantly being discovered.

One of the sweetest items of news an editor is desirous of obtaining is that relating to it, which he spreads out in exaggerated limits, and with such skill as makes it very interesting. The usual occurrence is this: some small town in a remote district has produced two men, one of whom furnishes the money, the other the brains, and is the inventor. For years the latter has been perfecting his plans in secret, earning very little, and was almost run dry when he fortunately met the one with the cash, to whom he disclosed enough of the secret to convince him, and induce him to put out the money. The next thing we hear, they have moved into some city, so as to obtain everything needful, and are settled in a room of a building where they work with closed doors. A reporter, unable to learn anything of their business by dint of watching, button-holes one of the men, who is very reluctant to talk; but in an unguarded moment hints something about perpetual motion, at the mention of which the reporter elevates himself to his full dignity, and by the use of his trained power learns all that is worth knowing of the new invention that is to revolutionize mechanics. Next day an account of the latest discovery of perpetual motion appears in his paper, and his work is done.

He never disturbs the inventors any more, and they are forgotten, returning to their backwoods town in due time, with heavier hearts and lighter purses.

A great number of inventors, if they do not actually attempt, devote considerable time to the study of perpetual motion. It seems to be universally understood that the one who discovers it will have accomplished a great thing, and the fame and reward that will follow therefrom will assume national proportions.

They are not at all convinced that it is an impossibility, from the arguments they hear against it, but generally defer operations on it to some future time, when they will have more leisure.

What strikes them in this affair is, that objections of nearly the same nature are brought forward to prove it unattainable as have been brought against other great inventions that have finally turned out successful. Before any great invention has been placed beyond doubt by practical tests, there are hundreds ready to show why it cannot work. The problem of crossing the Atlantic by steam had a book written against it, said book forming part of the freight brought by the first steamer. And this was one of the simplest sort, involving merely an arithmetical calculation; and how one could be found to write a book to disprove it is surprising.

This, too, is what helps to confirm inventors in their craziness. They have heard of the strong objections to other inventions, that have nevertheless succeeded, and flatter themselves their own is in the same plight, requiring only perseverance to make it all right.

It is useless, then, to talk or reason with them, for they have that strongest sign of the disease so marked in those other people sent to the asylum, — they believe all others to be crazy but themselves.

This is evident from the fact that, no matter how clearly you demonstrate to them what is wrong about their machine, and why it won't work, they heartily believe you do not understand it. They care not how much better skilled you are in the branch to which it pertains, and how much further information you get from all the explanations they can give, which surely ought to leave nothing in the dark.

But, on the contrary, they think, because you do not coincide with them, your obtuseness is great; which clearly

shows they are laboring under some mental fantasy, that clouds their judgment.

It seems the only possible construction to put upon this strange conduct of inventors is, that though there is nothing left untried to convince them of the worthlessness of their inventions, and while they almost acknowledge the same, they cherish a hope things may turn out differently. This hope is so dear to them it gives rise to all the delusion that leads them on, and makes them willingly undergo all the pains and hardships they meet with. Like the one who digs for a hidden treasure, though having no positive assurance he will find it, the hope of doing so enables him to continue his efforts, or, like the one who buys a lottery ticket to get the prize. Though we think it very unwise for a government to take into its pay all kinds of projectors and experimenters, almost every nation acts as foolishly in other ways.

It gives large pensions to heirs of men long since dead, who should only be rewarded during their own lifetime, and with much smaller sums. It bestows privileges on one class, at the expense of another; and these are always, in whatever manner disguised, simply permissions to rob and plunder, under the cover of law. It keeps many soldiers excluded from useful employment, — a semblance of barbarism, a disgrace to civilization, as their professed object is to kill and destroy.

But we take it these are bad enough, and, as long as they remain, sufficiently burdensome, without adding to them the race of crazy inventors, who, like weeds, spring up and flourish in spite of all impediments, and seem to thrive on poverty and want. Like weeds, too, which stunt the useful plant, they often become an impediment to those possessing ability and genius.

THE REQUISITES OF A SUCCESSFUL INVENTION.

As inventions are being constantly produced, and the business increasing, there must be some parties who are at the expense and loss of much valuable time and study to no purpose, as most of all the inventions that see the light prove worthless.

Those who must bear the losses are the inventors of the same, who attempt to do what no government feels able to do, and dares not undertake, — bear the expenses of those

who experiment with new devices, and hazard money and time on what in the end may prove failures, and which, in the majority of cases, would be seen must be failures, if soberly considered with unbiassed minds. If, then, it is in accordance with prudence for a government to incur no risk by purchasing inventions, it seems but fair it should not act the part of an encourager of the same, in a manner that leads many into error, that causes them to bear expenses and labors beyond their power, or in any way make the hope of so uncertain a reward excite them to unavailing efforts.

As we have seen, inventors are generally the illiterate and poorest of the people, and the easiest deceived; it is, then, not simply a wrong to profit by their ignorance, even if the country is the gainer, but a crime that should be checked. There is not one in a hundred who makes as much money on his invention as he would if he had followed his regular occupation during the time employed at it, to say nothing of the extra worry it entails. It is our opinion, and we speak from a knowledge of facts, not one in a hundred of those who take out patents makes as much on them as the cost of obtaining the same, including only the government and attorney's fees.

There is, perhaps, one in a thousand who makes any considerable sum on his invention, secured by patent. He it is who by his success leads so many astray, in the vain expectation they may do likewise. The nine hundred and ninety-nine who fail have no weight whatever with them, as serving for an example of what may happen to their venture.

Accounts of the few money-making patents are kept constantly before the public, and the wealth and esteem of the proprietors expatiated upon; but scarcely ever is anything said about the suffering brought upon the unfortunate ones by their love for patents, or how many commit suicide through disappointment on account of them.

The world is more or less made up of deception. If there were none deceived there would not be so much inequality. But why this deception — not alone in patents but in many other things — should be connived at by those who wish to be esteemed men of upright principles, is a question the answer to which does not strike us as reflecting credit on the age in which we live. One successful patentee induces

hundreds to imitate him; just as the few lucky ones of all those who gamble in stocks induce multitudes to try the same means to increase their capital, and learn, when too late, the chances were against them.

Alluding to stocks, there is great resemblance between the risks those run who take out patents and those who invest in stocks.

The patentee is the more harmless, and has, at least, some proof that he intends something useful, and the losses invariably come home, like the often-quoted chickens, to roost, and there they remain, ever after, domestic birds, chirping the notes of the fool and his money.

The one who buys stocks has but one thing to trouble him,—the change in the market value of the same. Unless extremely ignorant in such matters, he knows the risk is in proportion to the nature of the securities he invests in; incurring danger of loss only when covetous of making more than sound concerns pay. A man who has placed his savings where he is satisfied with fair interest, can attend to his regular business and earn as much as if he had nothing else to think about. It is quite different with one who risks his money in a patent. There is nothing he can invest in, so to speak, as an inventor, that is not a trouble to him, first, last, and all the time he is interested in it, except the thing be so small and trifling that there is hardly any cost outside the government fee.

He must put out considerable money, both in building his machine and obtaining a patent. He must devote a great deal of time to it, with much perplexity of mind, and thoughts withdrawn from what might be much more beneficial. He must learn many things about the intricacies of the patent-law, which at first he was led to suppose very plain and simple, but which, to his surprise, he will find the best patent-lawyers don't understand in all its bearings. How can he tell, then, what may not be an obstacle in his way? After spending years perfecting his machine he may find some one else was ahead of him, or claims to be. If people can be found to swear falsely, — and there are too many of them, — he will have the further trouble of getting others to refute them; and pay big fees for the same.

The less his experience, the more likely he is to think he knows what his rights are, and what the proper solution is, when any of his claims are questioned. But, alas! he will

find others don't think the same as he does when there is a contested point, and often have good reason for not so thinking. He may easily overlook defects in his own reasoning; may not be aware such defects exist, until they are brought out in bold relief by his opponents; and, unless more ready to detect differences than ordinary inventors display, he will not be able to see his errors even then, but attribute what are claimed as such to a wilful perversity of facts on the part of others whose interest it is to defeat him. Not a cent of what he expends, and no compensation for his time and trouble, will ever come back to him, unless his patent is a success. Mere success is not always sure of bringing reward; that is, his machine may do all that could be reasonably expected of it, and yet return no money profit.

There are very many things that must be taken into account, as the rejection of a machine may happen from various causes which the inventor could never be made to rest a doubt upon.

It may do the work so little quicker than hand that few will care to buy it; for those who need it often prefer to wait, thinking better machines may soon appear, especially if the price is considerable, which must always be the case with new machinery. In small articles that cost but a few cents each, and which inventors are told, by patent solicitors, pay the best, the trouble is people will not be bothered with them unless they save a great deal of labor, which not one in fifty ever does. Who ever saw the thrifty housewife who depended much on kitchen patents to get her work done? And yet the multiplicity of these is very great.

She well understands there is often more time lost in fetching the patent from where it is kept, or hunting it up, than would suffice to do the work by hand or in the old way, to say nothing of having to keep it clean and in a place where it may always be found.

If one robs you of your bonds you can have him prosecuted directly. If you don't know who has taken them you can stop payment on the same, so there will be no loss. But a man may steal your patent, and defy you for years from getting judgment against him, if at all. It will depend on its merits and value, and not on your rights to the same. The more valuable, the more litigation likely to follow. There was no doubt of Whitney's rights to the cotton-gin; still he had to give it up, and turn his hand to something

else, because it was stolen wholesale before his face, and the law was powerless to help him. One can hardly attend to any regular business when he has an invention on his hands. It absorbs a great deal of his intellectual activity, especially if it be his first; and few men ever take out a second patent having been entirely cured of the delusion by their first experience.

If he was not crazy, when he began, the chances are much against him that he will be before he gets through, from the worry and trouble of mind, the disappointments and unlooked for obstacles that are ever coming before him.

There is scarcely anything in which one may be so easily deceived about inventions as in forecasting what certain combinations may result in. For no matter how simple the change in a machine, there are always new conditions or relations which arise from that change, and, though of apparent insignificance, may be the very things that will prevent it from being what was expected. The phonograph was expected to do great things, and to be universally used; but the inventor overlooked some trifling things, which, however, he was unable to overcome, and what was to be such a wonderful achievement has turned out to be useless. Still, it will do all the great things that were claimed for it on a single machine, but can go no further.

A machine will not pay unless it is in considerable demand. What causes this demand is one or more of these three requirements: it must do work faster than hand; or do work that cannot be done by hand; or it may gain favor by doing what before necessitated great bodily exertion.

The sewing-machine is an example of work being done much more rapidly than by hand; and, consequently, of its great demand. The lathe is an instance of the second, and capable of doing what cannot be done by hand; the derrick and other machines answer the third. Every machine, to find favor with the public, must possess at least one of these advantages. But there is another thing inventors pass over too lightly, — this is the merits of the machine already in use. It does not prove your machine is a grand success, and you are certain of making a fortune on it, because it does work quicker, better, and easier than hand, if at the same time it is not superior to the machines that have done the same work up to the present.

This is all the more necessary to consider, since the

greater number of inventions are not whole machines, but improvements on parts of other machines. This is owing partly to our having so much machinery, which leaves less chance to avoid the path taken by others, and partly to the abnormal impulsiveness of inventors, who see opportunity for improvement in everything, and who think their ability to remedy defects is proportionate to their ability in discovering them.

There is, perhaps, nothing that shows more clearly the craze for inventions that has taken possession of the public, and how far they are from estimating properly the value of new contrivances, than the little things they seize upon to obtain patents for. The only condition necessary with them is that it is an improvement that they were the first to think of and give it shape. They utterly disregard to what extent it is an improvement. They seem to have lost completely the power of distinguishing what is little from what is great. The importance of small things has so grown upon them that they no longer look upon them as small if they are only improvements.

If it is difficult to dissuade one from working at a device that cannot be shown satisfactorily to possess any advantage; it is many times more difficult to do so when there is the least particle of merit in it, no matter how infinitesimal it may be. Inventors readily see the meritorious points of their productions to an exaggerated degree, but the disadvantages they will scarcely take into account at all, and, if they do, it is only to show how easily they may be dealt with.

What gives rise to so much deception on the part of inventors is that all mechanism is more or less defective. It does not necessitate, then, the exercise of great ingenuity to perceive some of these deficiencies; but how to remedy them without incurring more expense than their removal is worth, often surpasses the most exalted skill.

Expense, then, is the first thing to be considered, and should never be lost sight of by those who plan and contrive. To save expense is nearly the whole aim and object of inventions. There are only a precious few in the world with money enough, who can afford to despise expense when they contemplate any acquisition.

The rule is this: nothing is an improvement that entails more inconvenience than its advantages amount to; which

may sound like nonsense, or the same thing as saying nothing is an improvement that is not an improvement; but we wish, however silly it may seem, we could impress it effectively on the minds of inventors, in order they might not only see the good things in their machines but also the drawbacks that offset them. If it is nonsense to tell a person this when he knows it already, must it not be a thousand times more foolish on his part to carry out the contrary in action, as, when he works a long time on what he thought an improvement, to find afterwards it was no such thing? It is easy enough to see it in the abstract, but not in connection with such stern realities as machines and one's mind overcharged with the modern notion of patents.

There is nothing we could desire more to convince inventors of than the worthlessness of small improvements. There is a great deal of ambiguity about the terms small improvement and small inventions; for many think they mean the same, which, properly speaking, they do not.

A small invention generally denotes that the article is small in itself which comprises the invention; as the "Return-Ball," "Egg-beater," "Pencil-sharpener," etc. A small improvement means some alteration made in or applied to a part of a machine, by which some advantage is secured; not, of course, denying these definitions will bear great modification in certain cases; but they will, no doubt, convey the distinction we desire to point out.

A small improvement is generally of no money value; while a small invention may be worth thousands of dollars. The disregarding of these distinctions causes numberless failures and disappointments to inventors.

When one learns there were several thousand dollars made on a small invention, because needed in every family, he is led to suppose if he could think of something similar he might reap a fair reward. No improvement, then, is too small to be despised; but, unable to draw the line between inventions and improvements, or their value, he gets himself into much trouble. To test his diminutive improvement it may be necessary to build a very costly machine; and then, when too late, he will be afforded an opportunity and be better able to judge how greatly he had magnified the thing.

The "Patent Office Gazette" describes many of these attempted improvements. A simple examination of them

will convince any one the greater number never could be of any importance. Still, each one must have cost at the lowest sixty dollars, if an attorney was employed. The government fee is thirty-five dollars, which must be paid before the patent issues. We know of no lawyer who will put the case through for less than twenty-five dollars, and this does not include cost of drawings or any other expense.

PATENT SOLICITORS.

It costs hundreds of dollars to obtain a patent for some inventions, which even then may be of no value. One of the type-setters cost half a million, and was a failure. What the cost of obtaining the patents on it was we are not told, but it must be great. Another cost a million dollars and was sold for ten thousand; that is, for every dollar laid out on it there was one cent obtained back.

It may be surprising to some to learn it may cost hundreds of dollars to secure a patent that is worthless. There is nothing very strange about it when we take into account all the labor the lawyers have to expend on it, and that this labor must be well paid. It often takes a great deal of toil and research to find out what your claims are, and a great many documents may have to be purchased and studied by them for this purpose. These documents are the specifications of other inventions preserved in Washington, and technically called "patents." A lawyer cannot tell, and is not supposed to know, the merits of your contrivance; the risk of that you take into your own hands. His business is to obtain a patent-right for what you are already satisfied is something new and useful. If a lawyer praises an invention put into his hands, and expatiates on its merits, he does so on the authority and in the words of the inventor; and it is impossible to have it otherwise; for he cannot personally attend to the operation of the machine long enough to be thoroughly acquainted with it. This would be a loss to him and detrimental to his particular duties. It would be extremely difficult for him to see clearly what the inventor himself has some doubts about, though he tries to make his attorney believe everything is provided against.

The patent solicitor then finds it necessary to leave him alone in his convictions and folly, and get out a patent for him the best way he can. The inventor in turn is much

deceived in the lawyer. If his courage was any way lagging before he made his acquaintance it will be very buoyant for months or years afterwards from the favorable impressions his invention had on the legal adviser; and the cheering words he spoke will greatly rejoice him; forgetting all the while it is his own hash that gentleman is treating him to; that he is but a mirror reflecting back true likenesses of the images thrown upon it.

The inventor works upon the fact that the legal representative must know a great deal about inventions, being in the business many years, and having obtained very many patents for different parties; therefore that his opinion as to the merits of new inventions must be valuable. In this he is wrong, for such opinions are chiefly useful only on points of law; for that is the counsellor's special province.

It is true his knowledge of inventions is extensive, and he is perhaps better prepared than any other to decide on the utility of new contrivances, admitting he had long practice, and understood mechanics; but the thing is so extremely doubtful it would not be prudent for him to go too far against the convictions of the inventor, for his own personal good.

It sometimes happens an invention will pay well, though the particular thing it does is of no real value outside from its novelty. In this case its life is short, but, while it lasts, amply rewards the inventor for his trouble. That is, people are taken by its beauty or imaginary good, but soon grow tired of, and will bear with it no longer, and it may be a generation before it is called for again. Inventors should rely very little on this feature in the work done by their machines, as the useful is a much more staple article, and the beautiful more generally monopolized by artists.

The solicitor's opinion, then, is of doubtful value. He would be nearer right if he condemned nine-tenths of all the inventions brought to him; but where would his business be if he were to do so? If inventors take pleasure in deceiving themselves why should others be blamed for not correcting them, especially since they are willing to pay well for being deceived, giving no heed to those showing them their mistakes?

They might perceive a good lawyer never insists, to a degree involving himself, on the merits of a machine, and if he appears to do so it is only on the testimony of his clients.

His experience has taught him inventors are too sanguine, too easily led to false conclusions, and it is not safe to give them unquestionable support; but let their statements stand, if they will, on their authority. It is true there is a class of patent solicitors who readily grasp at every invention offered them, and decide on their merits at the first interview. So convinced are they, apparently, they will propose to go shares with the inventor, and bear the expense of building the machine. The inventor's joy at this is unbounded. Why did he not know of such men before?

Many are the inventions he could have brought forward under such favorable auspices had he known the obstacles were so few, and there were men in the world who, though they could not invent, could readily see the merit of others' inventions, and possessed public spirit enough to lend a willing hand to the impecunious projector.

But repeated visits to the accommodating solicitor, with loss of many days, finds his invention in *statu quo*, not a single pattern made, or any work done upon it.

After much disappointment the true inwardness of the case dawns upon him. The man of such fine words never intended to bear the expense of making a machine for him on its merits, as they were described by the inventor. He should have other evidence more reliable. The delay was caused by the solicitor trying to find out the real value of the contrivance, and get other parties willing to bear the cost of manufacturing it; all of which he might know from the beginning if he had not been silly enough to expect it could be otherwise.

People generally value money so highly they will not part with a nickel where they think it will not benefit them. How, then, can it be supposed they are such dupes as to throw away on a proposed machine many dollars, to have it constructed to satisfy their own curiosity and that of one who claims to be an inventor, and who is a stranger to them?

When the solicitor has satisfied himself the invention is of little or no importance he will readily give it back to the inventor on his paying the cost of the patent. If, on the other hand, he discovers it possesses merit, or that he may make something on it, it is little the patentee need expect; for the solicitor will want and secure the greater part for himself and those who took it in hand.

Considering the greater number of inventions are of no importance, we do not think this class of patent solicitors so detrimental as may be supposed; for it is a good proof when they allow a case to drag that it is worthless. But they will not tell the inventor so for the very good reason he might not take it back and be willing to pay the costs; which he might in justice refuse to do, as they agreed to bear the expense. The good they do consists in arresting and delaying the inventor when his fever is at its height; when he has so far succumbed to the feeling that he is a genius as to undertake a journey in quest of legal advice with his wonder, or a likeness of it, stowed away in his valise. Inventing, besides being a cause that brings other diseases on the subject, is in itself a disease, like the measles, whooping-cough, etc., which every one must have at some time. The difference is that it affects the mind, and is somewhat similar to the affliction that makes everybody think at some portion of life they can write poetry or become musicians; makes some rasp away on a squeaking violin, or disturb a whole neighborhood by thumping on a piano; others compose rhymes, and wonder their miserable verses are rejected, or, when published at their own cost, spurned by the people and the stalls of the booksellers.

The delay which this sort of solicitors induce often enables the inventor to pass through the crisis and return to sound mind with little or no loss to purse or integrity, either moral or physical. It is then they perceive, like one recovered from bodily illness, how dangerously they were affected, and are prepared to laugh at the state of mind that, as a magic spell, could render them so unlike themselves, — so unlike what they were before or after inventing had taken possession of them. If it is our desire to discourage inventors who have not any more than the ordinary inventive ability, on account of the losses it brings upon themselves, we also would wish to do the same thing for other reasons; to save the unoffending from being made victims of, and all being tormented with details of the great inventions that are always on the point of being brought forward, many of which never appear, and a large portion of the remainder are valueless or absolutely injurious.

Well-meaning friends take pleasure in rehearsing these accounts, and our newspapers furnish them as readable matter.

To be compelled to hear or read what we know from the slightest knowledge to be utter nonsense, when we are not in a facetious mood, must be an infliction almost unbearable.

If inventors are not favored they take it ill, and refusal to waste time hearing their plans is an insult. Where it is in one's power to do so they think he ought to give them an opportunity, and substantial aid to help them on. In this they are very unreasonable, expecting others to so far neglect and forget their own affairs and take up theirs with all the misdirected zeal they themselves possess.

What the inventor wants others to accept and believe without doubting has not been proved; why then should he expect them to act as if they were convinced, or act at all in the matter?

Others are certainly not culpable when they allow him — what they claim for themselves — freedom to conduct his own affairs and build airy castles if he so elect.

If he cannot carry out his schemes unless others aid him, when this aid is refused it is a strong proof he has undertaken what is too much, and a good reason why he should give it up. If one tries to borrow money to build a house, and is refused, he is not apt to think there is anything wrong in it, as every one has a perfect right to keep or part with his own cash. But when it is a case involving an invention, he thinks they should be a great deal more liberal, for there is a difference. Yes, but the difference is against him, there being a doubt about the invention, none regarding the house, for it never fails to be useful.

Let us give an example, showing how easily would-be inventors are mistaken, and how they unconsciously try to deceive others, not thinking there is any great danger or possible evil wrapped up with their proposed improvements. Once upon a time a sharp-sighted fellow perceived that some of the wheels of a railway train slid along on the track when the brakes were applied. Here, he says to himself, is a chance for an improvement, and, where so much is required as on a railway it must needs pay.

The track is worn more by the wheels sliding on it, and the wheels are worn flat in turn by the track, so that, after a while, they become so uneven it must cause great jarring; and in course of time, and when perhaps the train is running at a high speed, break, be the cause of its going over an embankment, and destroying many lives. Here, certainly, is an opportunity for an inventor to exercise his philanthropy,

and he would be blamable in the extreme if he did not attempt to remedy so great a deficiency when he might do so with, perhaps, very little sacrifice, and there was no doubt as to the certainty of the reward.

This was sufficiently convincing to the inventor, who straightway goes to work and gets up his contrivance, and, with considerable pluck and skilful representation, obtains the consent of the B. & A. R.R. to attach it to one of their cars. The accommodating road-master details an engine, when all is ready, to test the improved brake, while he looks on with much doubt as to the result. What is that result? The success is complete so far as preventing the slipping on the rails; for the new brake gives it no chance to touch at all, lifting it clear off the track, while the burly road-master's fat sides convulse with laughter. It is true the improved brake might be applied in such a manner as to prevent the lifting, but would it then be superior to the common brake? By no means. In the first place it would cost more; for the new idea was to have rollers forced against the car-wheels, that, while they were bringing it to a standstill, they themselves would be turning. The brake in which rollers were substituted for the simple plate would not only cost more, but its operation would be more difficult, allowing it was effective, and it would be much more liable to get out of order.

This is a fair illustration of many a proposed improvement, and by no means one of the worst reflecting on patentees; for there are many others so extremely ridiculous they would hardly be believed, if described, and no one would have the patience to bear with a recital of them.

In this case the inventor was led astray, and was wrong from the start, and continued wrong all through. His first fault lay in assuming that others did not perceive car-wheels slid on the track sometimes; or, if they did, that this sliding wore facets on their surfaces; or, if so, they did not conclude it might cause the train to jump the track, plunge into an abyss, and hurl many into eternity. Or, if they understood all this, they did not attempt the remedy, or knew not how to go about it; therefore he might be the first man that thought of it; or if there was another he had not yet put in his claims, and it would be no small consolation to be the individual who would, by his genius, prevent even one such terrible catastrophe.

But the railway men and others were not such fools as our inventor rated them. They were perfectly aware that wheels sometimes slide on the rails, but not to any great extent, and mostly of the light cars when they are empty. It is hardly possible facets could form on the surfaces, for the simple brake has a tendency to correct such error while rubbing against them, which the rolling friction has not, but its effect would be to increase such irregularity; for its point of contact with the wheel would be very small, while the stationary brake-plate covers several inches, and can be made to cover one-third of the whole wheel, if desired.

This single advantage of the common brake is enough in itself to prefer it before all others, and is probably the reason why it has always been retained. It is not necessary to show up the falsity of the inventor's many other conclusions; for, if the ordinary brake does not ruin the wheel by causing it to drag, then the train is not thrown from the road by it, and passengers are not hurled into eternity on account of it, and friends are not caused to mourn for them, for they have not been killed by it.

The terrible accidents the inventor imagined he was going to prevent by his improvement would undoubtedly be caused by it if the railway men were foolish enough to adopt it, taking his word for its merits. After all we have said it does not appear a single alleged claim of the projector has been sustained. The only one, and what seemed to be especially dear to him, was substituting the rolling for the stationary friction. This might be an improvement if smoothness only was required; but the very smoothness of its operation would be fatal on a train; for a given amount of friction is required to stop it; the quickest and easiest way this is obtained, other things being considered, the better. If rollers were used it would be necessary to increase the power in exact proportion to the smoothness of their running, as one of the simplest laws of mechanics shows.

This increase of power would greatly offset the prevention of irregularities on the wheel, if that was obtained by the new brake, which was not. Therefore the proposed improvement was no improvement at all, but as many steps behind the brake already in use as its numerous disadvantages amounted to, all told.

SOME INCONVENIENCES OF THE PATENT LAW.

There is another great inconvenience attending the patent law, which is that men are obliged to seek its protection whether they will or not. If one makes a new contrivance, which he desires to use only in his own business, he must obtain a patent on it to hinder others from denying him the right to use it unless he pays them a royalty.

If he does not see fit to do this he must go to all the trouble of proving priority. It would seem puerile to defend himself on the plea that he did not want the trouble of getting a patent, and was willing others should use it if they did not bother him, so generally is it believed every one who has made a valuable invention is only too willing to have it patented. If he does not there is nothing to prevent others from stealing the invention and getting a patent for it as if it were their own. Instances of this liberality of inventors in not securing their rights are few when compared with the whole number; but they occur oftener than is supposed. The productions of such inventors are always useful, for the inventor knows what he is about, there being no inducement outside his own business to mislead him; and his prudence is characterized by that soberness that proverbially attends private affairs, as compared with what is public. We have known of a case where a man made a very useful invention; but never had it secured by patent, and allowed another party to do so, for he did not care to use only one, and that in his own business.

According to the general idea of patents he was running the risk of being prosecuted for using his own invention. No doubt he was; but he preferred this to the trouble and expense of getting a patent. What is remarkable, he was never disturbed, so that his invention paid him well in the saving it was to him of labor, and cost him only the expense of construction.

From this it appears the object of the mass of inventors is to make money by getting some hold on the public without giving due equivalent; whether justly or not, they don't care, as may be shown from their own words and acts; and it is not anything to be lamented that many of them are disappointed.

There is another reason why they cannot succeed, namely,

there are too many besides, who make it their chief study to rob the workers.

What chance is there for an inventor who has not a first-class contrivance, to make money unfairly, when every source of so doing is monopolized by others? They are not fools enough to give way to him merely because he claims to be an inventor. They are just as much on the lookout as he is, and he must be lucky, with even a good contrivance, to escape being defrauded by them.

He does not succeed so well in deceiving others as he himself was deceived when he thought it was a great thing, in his ignorance, to own a patent.

A very common policy with some inventors is to try to sell their patent before they have given it a rigid trial. This would be a very easy way to make money, for it would be supposing others would be willing to run a risk which they themselves were not.

A very easy means to shirk the responsibility of failure is to get a third party to sell it for them. If he does so, he is not accountable, for he did not know the defects; and the inventor is not to blame, for he was not the negotiating party. This is all very fine, but it is unnecessary to say that it never succeeds, only often enough to prove the exception. The inventor with such a notion finds that instead of being fortunate enough to deceive others he himself gets left.

There is an immense loss resulting to the public from otherwise good inventions. Take, for instance, the sewing-machine. In the beginning there was a very high price charged, but there was nothing very wrong in this, for the expense was great. The evil consisted in continuing it when huge profits might be made on half such price. Their patent-rights gave the proprietors this power, so that a machine that cost only ten dollars to manufacture was sold for fifty or more. If one got a good machine for fifty dollars, the amount beyond its actual cost would not be regretted at that time, if it came anything near what was claimed for it, for it was really useful in doing work quicker and cheaper. But the great profits from exorbitant prices induced other parties into the business to make a haul also. Those little acquainted with patents will say this was impossible. Was not the thing secured to the first parties by patent-rights? In this they discover their ignorance. Everything about a machine cannot be patented, unless we

suppose the inventor lived in the days of Adam, and even then he would meet some difficulties, for there was no patent-office to make out a patent for him, and he could make no money on it, for there was no general public to be fleeced by such right. In our days there are both a patent-office and public, and the object of the former seems to be to give certain parties rights which don't belong to them. When the sewing-machine was invented, many things entered into its make-up that were known long before, so that "new and useful" could not be claimed for them. Cams, levers, pulleys, cranks, and shafts were useful, but not unknown; they could, therefore, not be patented except in combination, but removed from these combinations every one was at liberty to employ them. If a new company, then, wanted to put a machine on the market, all that was necessary was to pay Howe a royalty on his needle, and avoid the particular construction of the other machines ahead of them. Howe held what was considered the essential patent, — the eye-pointed needle, — a needle having its eye near the point. This was so necessary it was thought a practical machine could not be made without it. Makers of sewing-machines found they could get other mechanism besides that used by Howe, to give the proper motions, but they could not get along without his needle, and had to pay him a royalty for it which made him immensely rich. The inducement to get up new kinds of sewing-machines was so great, because of the enormous prices at which they sold, many very poor kinds were offered to the public, and sold for the same price as was charged for the good ones. Those who purchased such poor articles were not only victimized to the same amount that the best companies charged, but had really nothing valuable for their money, such machines, long before they were worn out, finding their way to the junk-pile.

The evil of this was much increased when the purchaser was some poor family that made a great effort to purchase a sewing-machine to help them, but found afterwards it was almost worthless. If they got a good machine for the same price, which they might, the case would not be so bad. But how could they tell what was a good machine? The poor one will often look as serviceable to the unskilled as the good one, and it may take a long time to find out the difference; for the poorest will appear to do well while new, but

will not stand the test of severe use, and the agents have the same opportunity to lie about them, and don't forget to do so. A poor sewing or other machine is a bad bargain at even the lowest price, if there is better to be had, for it is a continual annoyance to the one who uses it, besides, as is often the case, doing inferior work.

If there were no patent laws, this trouble and loss caused by worthless machines could not occur, for all would have the same privilege to make good ones, employing only the most approved mechanical combinations. Though the price might be large at first, competition would soon reduce it, or, at least, people would get something of value for their money. To this day exorbitant prices are charged for some, and many poor ones are offered for sale, though they are much fewer than formerly, as the extremely poor sort have been found out by experience.

Another thing inventors ought to consider, and which they would, without being reminded of it, if they studied the question, is, — that the number of useful inventions that will be produced in the future, cannot work so great changes as those that have been produced in the past, and, consequently, there cannot be so great profit made upon them. This is especially true in mechanics. So impossible, we might say, is it to supersede many of the machines now in use, and which it has taken ages to bring to their present state of perfection, that we may set it down as a certain fact they never will be.

We are willing to admit there is opportunity for many great discoveries, and many will be made; but what we maintain is, there will be very few great ones in mechanics. Chemistry, metallurgy, electricity, astronomy, etc., will, by the exertions of inventors, be made to yield secrets we are unprepared for at present. But who will say the steam-engine, loom, printing-press, and numerous other labor-saving devices will be superseded? And, if they should, will the machines that take their places work as great changes by being as far beyond them as they were of the methods used before they were thought of? Certainly a person must be very poorly acquainted with mechanics to believe for a moment such a thing possible. None, perhaps, are so credulous in this regard as inventors themselves, or less able to draw the line as to the possible limits of what may be accomplished by machinery, until they have had much

experience, and even this does not always banish a superabundance of the mysterious from their minds, being still willing to admit of doubt where there should be none.

But in truth there are no more stern realities in the world than machines; and it is possible for one well skilled to ascertain very closely the bounds beyond which mechanism cannot go.

If it were true, as some assert, there is a way for doing everything by machinery if we can only find it out, in course of time everything would be so done; but no one, we believe, is so sanguine as to think the day will ever arrive when inventions will have advanced so far that there will be nothing left for people to do but recreate themselves with amusements. Still this is the logical conclusion we must draw from the great belief and confidence inventors put in mechanical contrivances.

They accede this, and think they are justified by the achievements they point to, the idea of which, at one time, would not be harbored by the most enthusiastic; and no one could be made to believe that possible which after generations looked upon without surprise.

To tell men, before railroads existed, such rapid time could be made on them, or the heaviest freight transferred over them without the employment of horses, was to be laughed at.

The other extreme seems to have been reached now by inventors who are willing to believe anything, however preposterous, if they have an interest in it, but, as we have said, they deceive themselves, and this deception costs them dear. Though it often happens one machine renders another necessary that would not be called for but on account of the former, still every new machine that serves a useful purpose counts one less in the number to be invented, because, if it supplies a want, a different kind is not required to do the same thing. Certainly there are no bounds to the demands of luxury; but our real wants are limited, and machinery for supplying them must also be limited.

The improvements that have been made on the plough since its first introduction are very many; but the plough in its simplest form is still in universal demand, and probably will be to the end of the world. If this holds good in regard to the plough, it is but reasonable to suppose many

other machines are as fixed institutions as it, and will so remain.

Humanly speaking, we may say perfection has been attained with a great deal of our machinery. The mowing-machine, for instance, is so nearly perfect in meeting the demand, that for all practical purposes it may be considered so. Better machines of this kind may be produced, ones that will run easier and possess some other little advantages, but they will not amount to much, for power is required; and a directing mind, these being the two requisites that always remain no matter how great things the machines otherwise accomplish.

The value of the mowing-machine is similar to that of the plough; it enables us to do with horse-power what was previously done by men. It is absurd, then, to think, from what we know of the world and the things in it, that there will be as great revolutions caused by new contrivances in the future as there have been in the past, or that there will not always be work enough for those who desire to be usefully employed as long as there is land to be cultivated; for when everything else fails the land remains and invites industry, with a sure promise to reward the laborer.

INVENTORS DUPES OF PATENT SOLICITORS.

Inventors, then, act very foolishly if they devote much time and pains to getting up new inventions with the sole object of making money; for, as we have endeavored to show, it is one of the hardest, if not the least successful, ways to earn an honest dollar for the inventor.

Many others make a good thing from the business; not from the inventions, but on the inventors of them. These are men who are never tired of holding out to the dupes all over the land glowing accounts of the rewards to be reaped from inventions, and who flood the country with pamphlets explanatory of the patent-laws, and how reasonable their fees are for obtaining patents. If the thing is so easy as they try to show, — for they admit a useful invention may be thought out by the least intelligent, — why then, the inventor might ask himself, do not they themselves take this method to make money, and invent some of these contrivances they say are so easily put into shape?

This conduct of theirs ought to show the inventor the true state of the case, if anything short of personal experience could do so. The fees he pays solicitors for obtaining patents for him are the rewards they derive from praising and extolling inventions; and this they find so remunerative it pays them to do their work in the best possible style, in order to deceive the greatest number; and in this way they become the most powerful adjuncts to the Patent Office, and materially increase the amount of money poured into it.

If inventors were a little more enlightened they might save all the money they pay patent solicitors; for it is comparatively easy to make an application in the proper form for a patent, and if not quite so nicely drawn as a lawyer might do it, if it describes the invention and states what the claims are, what more is required? If the inventor makes some mistakes in his specification, what wonder? The best law men get caught oftentimes, and it is an impossibility to state things so clearly that they cannot be construed to bear different meanings. Patent solicitors lay great stress on the importance of properly preparing the specification and claims, and almost assure you their work is more important than the inventor's, — that, however excellent the invention, it may become next to useless if not described and its claims made out by a skilful lawyer. This seems very plausible to the inexperienced, and is the reason why so many place such confidence in the solicitors. They act unwisely in doing so.

With new inventions it is simply impossible to draught the claims in such a manner that they will be the strongest that can be made; for there may be as much inconvenience met in large claims as in small ones, and often one would wish he had narrower limits bounding these. Take, for instance, work done by some revolving piece of mechanism. The inventor may claim this as patentable, without denoting the particular velocity required to do the work; afterwards he learns there is only one rate of speed that the work can be done at, and this will go a great way towards breaking down his claims, and make it possible for the infringers to succeed against him; for, if the broad claim is considered to be the ground of his patent, it is evident he claimed too much, and what was false, and therefore it cannot stand.

The general impression is that the claims are strongest

where broadest, and to have them broad as possible seems to require the skill of a lawyer. But this high esteem of the lawyers has a certain degree of fraud in it.

The inventor himself, as we have seen, is apt to place too much importance on his invention, and consequently to claim too much for it; and as he extends its importance in his own imagination he justifies his acts of tyranny towards others. If he contented himself with what he was sure he was entitled to, it would save him much trouble, and make much less work for the solicitors.

If there is something found afterwards which he might have claimed, but did not think of till he learned it from others, though intimately connected with his invention, it is clear it does not belong to him. Though the United States is thought to have the most effectual patent-law system, Canada is ahead of it in some things. One is that it requires the inventor to make out his own specification and claims. This we think is the right way. But we may be told an inventor may be unable to write; if this be so, who is to blame for his illiteracy? How did he pass his early years before he was able to work?

If he was not genius enough to acquire such common-place accomplishments as reading and writing, how can it be supposed he is able to make discoveries that have baffled those who are his superiors in these things? We do not doubt but there are those who may produce some mechanical invention without being able to write; but it can scarcely be expected to be anything else but mechanical, and of a low order of the same.

But we cannot see how it could be much of a grievance if such could not obtain a patent, because it is generally the illiterate that suffer most from placing too much confidence in patents, and furnish most of the work for the lawyers; neither can we see how this rule can work in Canada.

How can the patent authorities there tell if the specification is drawn by the inventor himself? They can only suppose such is the case, and refuse to correspond with a solicitor; but the solicitor may be at work just the same, only that the patentee is the only one recognized; and this may give him some advantage.

If this rule could be carried out it would be a great benefit, and specifications would, no doubt, be more easily handled. That is, the inventor's own work would be nearer

to what was required, as he would most likely try to claim what he thought he wanted secured to him, or would go to such absurd extremes as would cause his case to be thrown out. It would be just as well for nine-tenths of all the inventors if their specifications were thrown out on account of their absurdities; for there is about that number of inventions worthless, and making out papers for the same would be so much work taken from the solicitors. This work will cost them nothing; but if they employ a solicitor the fee will be considerable. This is all the more reasonable since the excuse many give for becoming inventors is want of employment.

More time is lost waiting on the solicitors than would suffice to do the work if the inventor had enough education to express his thoughts clearly, which is all that is required.

If inventors were compelled to do their own describing, it might not render their number any less, but it would be much easier to deal with them and bring them to their senses; for it would tend to show them their work is not much more important than other people's; and they would sooner abandon worthless inventions they cling to now, encouraged by their solicitors. Since so small a percentage of all patents amounts to anything, the inventor's labor on all the rest is not only lost, but the learned legal labor of the solicitors is also lost or wasted as far as the inventions are concerned; but the labor is not a loss to the lawyers, though it may amount to nothing to the clients; for they have to pay whether they derive any benefit therefrom or not; and the attorney's work on the papers for a worthless invention may be, and generally is, as carefully done as if the invention was valuable; for they cannot be expected to tell its ultimate fate or value.

It is also nonsense to suppose a mere technical blunder will invalidate a patent-right. If the inventor has gone to the trouble of building a machine, his specification, in all reasonableness, is made from a description of that machine; if he makes a faulty statement, on account of his lack of education, in attempts to put his ideas of it on paper, does not the machine remain unaffected by the writing he has done, and cannot his mistakes be easily corrected by reference to it? But all inventors do not go to the trouble of building machines before trying to obtain patents, contenting themselves with models, if they even go that far; and this is just the reason why they get so badly sold. They merely out-

line an invention, and then try to rope in others to push it forward without any or little expense to themselves.

They are very willing, then, to go to the expense of paying a lawyer to have their claims solidly established, for the trouble and expense of this are far less than getting up an actual working machine, a small part of which may cost more to perfect than the patent expenses amount to. These constitute a class that can hardly be honored by the title of inventors, but, rather, of invention speculators. They try to have their plans properly drawn, so that, if any real inventor should, at some future time, stumble on the same thing, he will be obliged to buy them out, and at their own price. Or, if they run across any who are prepared to go shares with them, bearing all the expense and sharing with them the profits, they will, in lieu of any other arrangement, settle with him to get benefit from their ideas, without ever having made a machine to test its merits.

THE JOINT-STOCK COMPANY FRAUD.

The inventor who has nothing in view but to make money will hardly go to the trouble of getting up a working machine, unless it is a very small affair; for it would cost too much.

After obtaining his patent, and he finds the solicitor who advertised not to demand his fee till the patent was allowed is unwilling to give him any further assistance, and others are just as unwilling to put out money on a thing so doubtful, what does he sometimes do? Make efforts to start a stock company, as this seems to be the last resort when every other plan to get money fails. The sudden notoriety that came to him, and which had its full effect upon him by his name appearing in the list of patents in the daily papers, had such an exhilarating influence that he scarcely could account for it; but this soon died away, and his patent became a thing of the past, no one seeming to take any further interest in it. This makes him feel like one forsaken, and he finds it necessary, in order to keep up his name as an inventor, to do something desperate, if even by that means he could show people he was not a fool, deceived by some silly contrivance he put so great confidence in as to go to the expense of getting it patented; and for no other seeming reason only because he thought it out him-

self and put some pieces of wood together to demonstrate to the obtuse minds of others how it would probably work, when they would be soft enough to give him money to experiment on and complete it.

What is the nature of a stock company in such cases? It is a combination — conspiracy if you like — formed by a few men to induce others to invest their hard earnings in what the inventors themselves are unwilling to spend their own money on. Some will deny this and say it is because they have not the money they try to raise it under the form of a stock company; but frequently we find the members of the company possess money, and will not risk it in what they attempt to make other people believe is going to pay well. They must be very poor indeed if they cannot make out money enough to build a working machine, since they have an inventor among them who knows how to plan it, and ready to do considerable of the work himself.

If they had a working machine capable of showing what its merits were there would be no need of going begging for capital, provided the work of said machine would be done much quicker or better than by hand, for then it would be in demand, and probably pay well. The inventor then hunts up a few other men as avaricious as himself to get money by making dupes of others with fine promises they will make well on the thing that has never been practically tested. Having found the desirable men they get themselves incorporated as a joint-stock company under the laws of some State most favorable for such wild-cat schemes. Prospectuses are published, and the name of the alleged inventor given to the corporation, as, for instance: —

The Patterson Horse and Cattle Renovating and Invigorating Company, capital stock, \$50,000; number of shares, 50,000, par value, \$1 each; stock divided as follows: 25,000 shares paid into the treasury to be sold for the benefit of the same; 15,000 shares paid Pelatiah Patterson for the patent-right, and 10,000 shares paid Comstock Bailey for organizing the company.

The officers promise to make this one of the best paying investments in the line of machinery used in the caring for horses, cattle, etc. There will be large profits for the punctual purchasers, as any one keeping a horse, cow, goat, dog, or pig cannot afford to get along without it. Then follows a special inducement to sell a small portion of this

precious stock at a price far below the par value, in order, as they unhesitatingly say, to enable them to get up machines and put them on the market.

Thus a company is started having nothing to base their promises on but a wooden representation of what they try to make people believe, will, when made of iron, steel, etc., do a particular kind of work, and earn large dividends for them if they will only invest. And from this nothing they try to build up the name and fame of a manufacturing concern.

Since the machine has never been made in the proper manner to show what it is capable of doing, and since there is consequently much doubt as to its success, it follows no one can prove it has any merit; therefore the 50,000 shares, which they say represent \$50,000, possess no real or ascertained value.

With half this nothing they try to show they have a treasury of 25,000 shares. True enough they are there, but worth nothing.

If, then, they can persuade others to buy this worthless stock they will have a grand opportunity to experiment on their proposed machine with the aid of other people's money. If their machine should prove a success, those who bought the stock will be entitled to only half the profits, as half of it is already held by the two or three men who started the project.

What looks still worse is these men will not hold on to their shares, but right at the first move desire to unload it at a reduced figure, which still further exposes them to the charge of not having confidence in their contrivance or its ultimate success.

If it turns out a failure, those who paid cash for their stock will be the only sufferers, for the others put no cash into it, only a few dollars for expenses to set it going, and even this they may charge to the cash stockholders. From this it would seem, no one would invest in such an enterprise, as there are so many others in which they can do so without any risk.

But it may happen some will be found to invest in such doubtful ventures, all the fools not being dead yet; and if it gets any start at all as likely as not a considerable amount of it will go.

One thing which is a great inducement to some unac-

quainted with such matters, to buy it, is the fact that shares the par value of which is claimed to be one dollar each are offered for twenty or thirty cents. From this they seem to think they are getting a dollar's worth for thirty cents. But it is evident, since the shares are worth nothing, they are getting no bargain; but throwing away thirty cents on every share they purchase. Calling a piece of paper a dollar that has not the government stamp on it does not make it a dollar.

A few men posing as a corporation without a dollar in their treasury very nearly resemble frauds, and in issuing paper, which they claim represents dollars, they are usurping the power of the government without giving the security which it offers. The government alone has the right to issue paper money because it has authority to tax all the property in the country, and thus regulate the amount of paper money required, which is all that is sufficient to do the business of the country without any aid from gold or silver. Properly speaking, gold and silver do not answer the definition of money so well as paper or any other substance that possesses no value in itself, but the stamp of the government on it, and for the reason gold and silver are of value without this stamp. Money should not possess this value for many reasons. If it does there will be less of it in circulation, and it will fluctuate more wildly. In insisting on its use we do not allow ourselves to take the full advantage of the benefits of civilization and an established government. Employing money of intrinsic value is only one step removed from barter, when a man exchanged one commodity for another, as a sheep for a coat.

When one pays gold or silver for what he buys he does nearly the same thing, and it is no advance beyond barter, only that it is more portable and easier to find those who will make exchanges for it. Paper is still more portable than gold or silver, and worth its full value when not repudiated in time of peace by the government that has issued it; and even in time of war it has been often the only means of preventing the annihilation of a nation. Absolute paper money would enrich the government that issued it to the amount required to do the business of the whole nation, and would greatly reduce the race of usurers who seek to have nothing but gold and silver recognized as money, and to make its circulation as limited as possible that they may compel others to pay them more on their loans.

Wise statesmen shake their heads when the benefits of paper money are shown them and decide against it; while every little joint stock company, that has only an egg-beater or mouse-trap to build their assumptions on, see the point clearly and, try to reap its full advantage by cajoling the public to take its paper which has scarcely the shadow of a foundation to rest upon, while the government has a strong and mighty nation behind it.

It is true the stock company does not claim its shares are actual money, but only something that represents value, — the model of a machine and the possibility of its success. All it desires is to exchange these shares for government paper money, if any one can be found foolish enough to do so. By the time the stock company has reached this stage it has assumed the appearance of, and to all intents is, a lottery. Considerate friends will purchase its stock just to try their luck and give encouragement to the aspiring genius who deludes them with the idea that it is a big thing and will pay well, having nothing to build upon but his own presumption.

There is scarcely any chance for an invention that comes before the public in this manner to possess any considerable merit; for if it did some would be apt to discover it, and all the uncertainty would be dispelled, or enough of it to cause some to take a real and intelligent interest in it, and require no distorted representations of it to deceive them.

But we find, when the thing is finally sifted down, it is the fact there is doubt of its being of any value when completed that constitutes the only reason for the officers of the stock company going to work in the way they do, and gives them the opportunity afterwards to escape the ire of the shareholders. If they would acknowledge they knew the device would never work they could be accounted frauds. If they were sure it would be successful there was no need of a stock company till they had completed at least one machine, and investors would then not have it to say they were deceived by the words of the projectors, but by their own eyes, — seeing what it could do.

A patent must have great value to be able to pay anything for a long time; for the expenses, even after it is proved practical, are very great. If it pays nothing but the running costs the inventor and his partners may be making well on it, while the stockholders get nothing, only the consolation they loaned money without any security to others

to give them employment. To do even this an invention must have more than ordinary merit.

It is comparatively easy, as we have said, to satisfy the requirements of the Patent-law in drawing up the specification for an invention, and herein it is especially so when one has worked in our business: for if he don't know what is meritorious about it why call it? But should he go to all the trouble and vexation of tracing the different parts of it when not convinced of their merits, and when, when completed, they did not prove what he expected, with nothing to be gained in perfecting the device? And if they contain his former suppositions, why should he bother about it going about all?

Now, all the Patent Office requires is that a patent to an inventor is a description of the same, called a "specification," followed by a list of the claims which he desires to be secured in, provided the same has not been patented or claimed by others, and that the thing is new and useful. This, surely, is simple enough, and, owing to the multiplicity of patents in the office, it is scarcely ever happens a patent is granted in the first application without several alterations having to be made: for, in tracing what the theory of the invention there will be found something wanting in it, and the inventor will be told he cannot be granted a patent on account of this when not that is what it is. What is he, then, to do? The office, in replying to his specification, will give him the number of the patent and the name of the inventor who it is said has anticipated him. He must then turn to his patent and examine it himself to see if the official judgment is correct. If, after consulting the patent, he feels the examiner is right, he must give up that chance in his claims to which it relates. If, on the contrary, the examiner was not the proper view of the matter, then he must write and point out the error, and, perhaps he will acknowledge and allow the improved claim.

The way to obtain papers containing a full account of any invention that has been patented is to send to the Patent Office for them, where, if they have not been printed, a copy will be made for you at the cost of transcribing the same. A great many of the patents have been printed, and a copy of them can be obtained much cheaper.

The descriptions of them given in the Patent Office reports are general, for no measure to be of benefit in a patent case. Some copies of patents not printed cost several dollars, and it is found necessary, in certain complications, to procure

patents from foreign countries to be sure according to law what one's claims really are and what is on record. It would, indeed, save a great deal if the inventor would lay out a few dollars in this way to find out what others have done before him, or what has been preserved in the various patent offices. This he is apt to think would be too much trouble; but it is always worth what it costs, and, by reason of the numerous libraries, it is comparatively easy to hunt up the names of those who have obtained patents, in whatever branch he decides to make his attempt.

If he does not do this in the beginning it must be done at some time if he continue his work to completion, and it is of any value.

Another thing showing the absurdity of patents and how blindly people pursue them is the quarrelling and disputes they sometimes enter into before they are certain their contrivances possess any value. It is bad enough to see parties wrangling over a patent that is in demand by the public; but to fight about an invention that no one outside themselves cares for, and it is difficult to tell if there will ever be any demand for, is, indeed, pitiable, and those so engaged deserve our commiseration; for, besides all the expense of getting up their machines, they unwittingly incur further losses in prosecuting each other; and, as the invention is of no value, they must both be losers, and no one get anything out of it but the lawyers. When one finds some one else is working on the same thing it makes him think there is more value in it than he had previously supposed; and, should this other one be behind in point of time, this fact urges him on and causes him to work all the harder.

The second one we might suppose would give up in despair seeing he was anticipated; but not so: he counts on some slight difference in the machines to enable him to hold his ground. This might be all right if there was any ground to hold. But if the public don't require the machine, to what end is all this quarrelling? Simply nothing else but the ultimate disadvantage of both parties, who all the time they continue their contest are under expense for legal advice and assistance.

PATENT-LAWS AND THE INDUSTRIES OF THE COUNTRY.

It is claimed it would be very detrimental to the manufacturing interests of the country if patent-laws were abol-

ished. And those who make a living on the ignorance of poor inventors howl whenever such a measure is proposed. How it could injuriously affect the industries of the nation it is difficult to make out. As far as we can judge, inventors often clog the wheels of industry, and, after the dog-in-the-manger plan, offer obstacles to it. Some inventors are so exacting they will allow in their agreement with the manufacturer that he must turn out only a certain number of the articles they give him permission to make annually. If this is not a restriction on industry, then what is? No one can tell where the inventor would stop if there were nothing else to check him but his own covetousness. It is well for our time that so many great inventions have long since passed out of the hands of inventor monopolists, and before the system of royalties and restrictions was reduced to a fine art. The repeal of the patent-laws cannot by any means be injurious to our industries, but would be beneficial to thousands of ignorant people who think they are, or can become, inventors with great profit to themselves, from the absurd notions they entertain of patents and laws relating to them.

Having no laws regulating patents will not, as some imagine, stop the production of inventions, for good ones will be worked out just the same nearly as now, but with far less waste of time and expense.

When one sees he can expect nothing from his inventions only by using them under his own supervision, or selling for about the cost of manufacturing them, he will not be led astray with the thought he may render a whole nation tributary to him. This latter idea is what causes inventors to act so foolishly and incur with indifference such great expenses. Though it seldom happens any invention is of so great importance as to enable the inventor to do this, there is to him so much indefiniteness concerning the extent of its usefulness that he scarcely ever fails to assign it a national or universal value, and his pretensions and hopes are in proportion; the result certainly of his ignorance, not illiteracy always, but of the relation the common affairs of life bear to each other.

It would not be a loss, but a mighty gain, to farmers to have the patent impositions removed from their tools and farm implements; some machines cost them hundreds of dollars that would pay the makers well at less than one

hundred. As those machines must remain idle a great part of the year, many of them cannot be of as much value as machines used in manufactures, nor of as great benefit to the owners; and therefore the price ought and would be reasonable but for the patent-laws that give the inventor the right to charge his own price; not the inventor always, but rather the capitalist, to whom he is forced to have recourse in his last extremity to get some slight returns for his trouble and outlays.

This seems to be the fate of all good inventions, that they are taken up by those who have money; and they, instead of the inventor, enjoy the enormous profits derived from them; while he is taken in as a workman or assigned an unimportant place in the firm.

The driven-well fraud is one calculated to arouse the farmers of the West to protest against patents *in toto*; and it would be well if anything could induce legislation to abolish the patent system, as it is fraught with so many evils to the general public and to inventors themselves.

There is no view we can take of the patent business that impresses us favorably, if we look to the good of the country and its future welfare. We don't think the public will suffer as much in times to come as the inventors; but the public will be louder in their protestations, for being conscious of having committed no crime, for which they should be thus afflicted, they will cry out against patent monopolies that hamper them, and seek to thrive because they must live. But inventors, encouraged by the law, if continued, will, when they catch the fever of inventing, be induced to incur expenses which ruin them directly or leave a heavy load for them to carry all the rest of their lives, however long.

Would-be inventors always make their attempts when young. No other age furnishes all the necessary conditions for the affection to flourish in. Older heads are wiser from dear-bought experience. If the hectic blush and vacant look of the inventor seem to be discernible in their countenances when combined with the verbiage of their projects there is no need to fear, for they have passed the age that paints everything of this growth in glowing colors, or would arouse their dormant energies and hurl them onwards to self-invented ruin.

There is nothing then that can be said in defence of

patent-laws to favor their continuance. From whatever side we view them they present objectionable features, some of which resemble rather the frown of the tyrant than the encouraging smile of a paternal legislator. That they have not been altogether valueless, up to the present, may have some truth; but of late years the number who seek to make money by becoming inventors has enormously increased, and the loss they suffer is to be deplored.

This loss and ruin they court through sheer ignorance of patent matters. It may not be credited, but some are silly enough to think the patent officials pay every one for their inventions as soon as they grant them a patent. These, of course, give the matter no consideration, and constitute the last link of a chain, so to speak, the first of which is the intelligent inventor, who looks to the office for no other support than to allow him what he is entitled to; the intermediate connections being those who understand, in a more or less perfect manner, what the law has to do with inventions.

It may be asked, what will we do with inventors worthy of recompense, if we have no patent-law? They benefit the world, therefore they should be rewarded. But is this the only way to reward them?

We find, after many years' experience, the number of worthy inventors is very few. One in a hundred is a fair estimate. If it is necessary to maintain an expensive patent-office department, and everything relating to it, for the benefit of these few, their productions should be charged with that expense before we compute the net value. This is something no one has yet done, and we doubt if any one will ever do it. Still, numbers are ready to cry up the great benefit to the country when a successful invention is brought forward.

If there are so great gains arising from all the great inventions that have appeared during the last century, why is it we are not proportionately better provided with things needed, or the strain on the laboring-classes in some measure lightened? How does it happen there are so many thousand paupers in countries that boast of the excellence of their patent-laws?

There must be drawbacks somewhere, or the gains are not as represented. The failure may not be the fault of patent-laws, but we take it they exert a blighting influence that is not taken into account; whether it is the gains are not

so large as claimed, or that the profits are diverted into the hands of a few.

If a dozen men are all at work to accomplish the same thing, but by different methods, it is evident the one who gets the best machine or process will drive out all the others, and their labor be lost. In estimating, then, it will not do to compare only his expense with the value of his machine when perfected, as it affects the country in general. It will be necessary to reckon in what the other eleven have lost. Neither is it always fair to judge from the amount of work a machine is capable of doing, without making allowance for other things. The work of a machine is often increased without any perceptible general benefit.

Much more work is put into many articles sewed by machine, than when made by hand; and if the hand-made was equally as serviceable, there must be a loss in this, or some deduction should be made for the extra work, uncalled for before.

Another reason why we do not derive as much from machinery as is supposed, is because a great deal of it is not kept in anything like constant use. When a company calculates what a great benefit their invention is to the country they are often woefully in error. If they have a thousand machines, scattered around in various towns, they strike an average and say at the least each does so much work; which may be, and for obvious reasons often is, far from the truth.

Many manufacturers buy costly machines, which they use very little. If the machine saves them anything they are satisfied; so that the proprietor's supposition as to its great saving is entirely at variance with the facts in many cases.

If the machine saves to the manufacturer the labor of three men, at the cost of only one, he would have the profit of the other two. But his business, we suppose, or that part of it, did not require more than the three men, and putting a machine in their place does not increase the amount of the general production. If the new invention were capable of performing the labor of twenty men, we can credit it with only the gain of two, as that was all the work the purchaser had for it. For this and various other reasons we do not get the full amount of work from machinery it is capable of performing.

It is wonderful, as this is a time remarkable for statistical researches, that no one has taken the trouble to find out the

real value of inventions, and the exact number of inventors who obtain any remuneration for their labors. Such a statistical table would no doubt settle the question satisfactorily.

It will not do to accept the assertions of patent-solicitors, patent-agents, or those who have put out money on an invention with the sole purpose of securing a monopoly, to enable them to dictate to the public what they shall pay for certain articles.

Their great grievance seems to be, that they will be robbed of their property if the law is abolished. This charge, of course, can have no shadow of justness in it, except in the case of existing patents. But no one desires the law to take effect in a month or a year.

It is too extensive a matter to be settled in so short a time, even if decided upon. Even though it were shown positively that the patent-law up to the present was unjust, and the large fortunes made under it should be restored in part to the country, still we do not wish nor do we think the government would repeal them without, at the same time, paying those who held useful patents, which had time yet to run, a fair amount. If the great work could be accomplished in ten years that no patent or patent system would remain after that, it would be a good bargain compared with the time. Before its end the greater number of the existing patents that so much howling is made about would have expired, and future projectors would arrange their plans so as not to put out ten or twenty thousand dollars on an invention, as some claim to have done, with the intention the government should secure them a monopoly.

The patent monopoly business, we think, should be removed in nearly the same manner it is proposed to nationalize land, — by doing justice to all.

To find out what will be justice to all is the only point on which men differ in these matters. As things are now inventors suffer great loss, with but few exceptions, on the one hand, and the public suffers on the other.

If the law is taken away the few exceptional inventors are the only ones who can possibly be injured, unless we include those who prey upon them. Even admitting it will be an injury to them, which we think is not the truth, would it not be better, as long as the multitude will be benefited thereby, as may readily appear to any unbiassed mind? The intent of our form of government was to benefit the greater

number, and is the only basis that can render a nation permanent, prosperous, and happy. Everybody knows, that is anyway acquainted with the subject, that the number of successful inventors is very few, and of unsuccessful ones very numerous. This is not the view the upholders of patent-law want us to take of it, but rather the great benefit inventions have been to the public.

In the case of wire-fences it is said it would cost one dollar a rod for boards, while wire, with all its royalties, costs only fifty cents a rod, and the farmers are unwilling to pay this. They are certainly right if the patentees could sell it for a fair profit at a lower price.

It is wrong, in many cases, to set the price up to what the commodity is worth to the consumer; it is the cost of production to the producer that is the only fair estimate in these matters. If we allow we should pay for everything what it is worth to us as a necessity we could not supply ourselves with things needful for life, that is, if we consider life is worth more than anything else, and the preservation of it is desirable at any cost. It is evident, transportation charges cannot be placed high on flour and provisions, because we must have them at any cost, or die. It would not pay one if he got a barrel of flour a thousand miles away for nothing, to wheel it that distance. Neither does it justify the railways to charge exorbitant freights because we cannot get our flour without them.

There is nothing much more thoroughly proven in political economy than that price cannot be established on the value of a thing to the consumer. An extreme case, cited to show its absurdity, is where one meets with some sudden danger, while another may free him from it with little or no inconvenience.

No matter how great soever the benefit we derive from inventions, we are, by no sense of what is right, obliged to pay the inventors for that benefit, but only for what it cost them in labor, study, and expense; to which we would add a fair profit for the encouragement of genius.

As this way of regulating patent matters, owing to the unreasonableness of inventors and capitalists, can never be attained, the only plan best calculated to further the interests of the majority is to abolish the Patent Office altogether.

We do not think some means will not be discovered to

reward merit, as is now done in many other things. Neither do we think our government will forget those who employ their talents in forwarding anything that can be for its benefit.

The only possible difficulty that inventors can meet with in future, if patent-laws are abolished, is to prove priority of invention. If they can do this what is to hinder them from petitioning Congress for a direct reward for their productions? Congress would then have the merit of the invention easily proved, as we suppose the machine or process to be in public use some time before; that in fact other parties had stolen it and were making and putting it on the market. This is the plan that has presented itself to us since commencing this work on inventions, and one that will go further than any now in existence, we think, towards doing justice to all interested:

Briefly stated it is this: Let inventors think, study, and work without any restraint just as they do at present; but let them be careful to keep a proper record of their work.

If they produce anything the public is willing to purchase they should sell it for the lowest possible price. This will preclude infringers to a great extent. But, if infringers and pirates step in, waste no time in trying to restrain them. Then, after the invention has become widely circulated, and the public acknowledges its merits by using it, will be time enough for the proprietor to ask the government to allow him a fair compensation for his invention. There is no danger this will be too low; for Congress is very liberal in the matter of pensions, bounties, etc. The only danger is it might be too large, when the inventor proceeded according to the skilful methods of the lobby; but it could never approach the vast proportions of the sums that have been gathered from some patents which have run their profits up to millions.

It may be said this would be very troublesome for Congress to be pestered with so many cases that might arise. Not at all; for it would be only the successful and beneficial ones that would have to be legislated for; these are very few and can hardly increase their annual number as time advances.

As it is at present Congress is often petitioned to further aid those who have already made immense sums on their patents, and without any show of reason, only to rob the

country still more. It is well remembered how the McKay Sewing Machine Association and others, year after year, annoyed Congress to extend their patents, though they had realized hundreds of thousands on them already.

In all probability they would not, under the conditions stated, be required to grant compensation to more than a dozen inventors annually. We doubt if there are that number of good inventions produced yearly. In view of the great benefit it would be to the country, and inventors in particular, it does not seem our national representatives would hesitate to perform such a slight labor.

It may also be urged to prove priority under these circumstances would be too difficult; but we cannot see how it would be any more difficult than it is at present, and it has to be done in a greater number of cases now than would then be called for; oftentimes without anything being gained by either party, as when the invention is of no importance. It is true some little inventions might suffer on account of their insignificance and bring no reward to the producers of them, but we could well afford to let those pass as the cost to the inventor is very light, and the new arrangement would not be likely to encourage him to spend much time planning to get a hold on the public at a very small outlay of inventive ability.

The English law-makers seem to have had a faint idea of this plan when they adopted their present system. It grants a patent to the first applicant without inquiring whether the thing is pirated, and leaves to the courts the task of settling the matter for the contestants.

This, of course, is no help to the inventor or public, because they did not go further and improve on the hint obtained. He has the same amount of litigation to face as with us, and the public are as thoroughly fleeced, whether it is the inventor or infringer who succeeds in maintaining his case.

Inventors, and those who get control of valuable inventions, are tyrants on a small scale; not always very small either.

The McKay company, before mentioned, argued a royalty of one cent per pair on shoes sewed by their machines was so little the buyer would not mind it. King George thought the very same in regard to other commodities. A few pence a pound on tea, and stamped paper were so slight the people would not feel them, were it not for the damagogues

who led them. Both were wrong, for the people do mind the slightest expense or tax, because they are compelled to do so by their poverty.

The owners of barbed-wire patents, and others, only look at one side of the question.

If it would cost the farmers fifty cents a rod more for boards than wire, they cannot say they have put that amount into the pocket of the farmer, for every rod he has erected, or that some one else would not think of putting wire to this use if they had not.

That their invention has been a benefit to him appears true; but we are not prepared to say it is as great a benefit as they claim. If it saved the landholders ten cents a rod they would be very desirous to employ it.

The proffered good and favors are not all on the side of the patentees. If by their inventions they are beneficial to the landholders, these are in turn a benefit to the patent-holders.

Patent articles would be of little account if there was no population but the makers thereof.

The wire men should consider the farmers are a benefit to them in nearly the same proportion they are to the farmers, all things considered. The one who purchases wire benefits the patentee or owner, and this is all the latter cares for. But to better secure the sympathy of the public he wants them to look at nothing but the great service it is to the farmer. He, in turn, cares nothing for the inventor, but what good it affords him. From the fact that he belongs to, by all odds, the larger number of honest toilers, their interests should not be weighed in the same scales with that of a solitary inventor, nor of two or three of them.

Those who do not consider the matter only indifferently generally side with the inventors, and think they are the sole benefactors and entitled to all they can compel others to pay; and it is very hard to persuade them there is anything wrong in the statutes enacted to control titles to property in inventions.

The law, too, is very much at fault in the rule it has adopted for deciding what constitutes patentability. That the thing is new and useful is all it requires to exercise its right of granting a patent to the one who applies. It is evident it may be both, and still undeserving of a patent. Many things are protected by patents that cannot be said to

have necessitated more subtle thought than any ordinary individual would make use of when there was an occasion for it. This proves an injury; and the cases are numerous in which it may occur. There are always changes going forward, and these bring about new conditions. Many things that were not thought of or needed before these changes will, consequent upon them, be called into requisition, and they will suggest themselves to the ordinary workman as a matter of course.

But the one who thinks of getting out a patent on them, and does so, will have the power of compelling others to pay him a royalty on the same, and thus make money at their expense. Not because he possessed more ingenuity than they, but because he obtained a patent on such a simple thing, which any workman would think of, but few suppose it worthy of a patent.

Where the thing is somewhat difficult, and such as but a small number would be apt to think of, we are willing to make allowance for the inventor, especially if it required expense and labor to perfect. But where the thing is so simple any one may think of it, and requires little or no expense to work out, it is certainly wrong to grant a patent for it.

This, we are aware, is a very delicate affair, especially to the examiners of applications, who cannot possibly be so conversant with all matters brought before them as to be able to decide what each cost the inventor, or what must have been the peculiar bent of his genius to produce them.

To one unacquainted with a certain branch of industry, some little inventions relating to it may appear very important which to its skilled mechanics are insignificant, and it is impossible for the patent officials to decide adversely, on account of their ignorance, were they so obligated, which of course they are not according to law, but only to use their best judgment, which leads them to the side of the inventor rather than against him. Thus many trifling inventions are patented that should never have been considered.

LITTLE HOPE OF SUCCESS FOR THE POOR INVENTOR.

To sum up, then, we may say the poor inventor has not the ghost of a show to make any money on his invention. It is more likely to be of no value than otherwise; for

inventors invariably exaggerate the importance of their contrivances, thinking them more valuable than they ever can be; and where worthless it takes them in many cases a long time to find it out; oftentimes, not until they have undergone an amount of labor and suffering that is astonishing.

If it is a useful thing it may be too difficult to make and get into the market, and, consequently, outside aid must be obtained to do what one's own energy is unable to accomplish. But others will not readily put money into a possible improvement, though the inventor is very apt to think they will, and he is very easily deceived by the fine words of those who are lying in wait for him.

He should remember the show or offer of assistance is not assistance, and, however others may seem to be willing to aid him, he must not count on that aid till it is within his grasp. Especially should he be careful of this in the case of patent-solicitors who promise to do the whole business for him, and save him the expense; for they of all others are the last he can expect disinterested assistance from, and not at all unless the contrivance possesses merits they are sure to profit by.

He may be fortunate enough to get successfully through all these first difficulties and place his production on the market. Then he is exposed to new dangers. The infringers and pirates will try to steal it, and it is not always impossible for them to succeed in getting away from him what he thought was his, and thus cause him to lose the fruits of his labor and skill.

Another great uncertainty is, that one cannot tell what may be accomplished, or what changes be made, to get around the inventor's claims in a new invention.

There are hundreds who go to work on the appearance of every new invention of importance, and study hard over it to see if they can avoid the claims of the patent and still have a machine to do the work. Sometimes they have wonderful success, and bring out better devices than the original inventors.

This is something that cannot be guarded against, and the patent-law does not offer any assistance or protection to the first inventor as against the second; for it is impossible to make due allowance for the exact amount of inspiration or suggestion derived from the work of the first projector

by the second, which is another proof patent-laws cannot be equitable and just, however well-disposed the law-makers may be.

Others may forward devices or processes not superior to his, but with more despatch and facility, and so leave him behind.

It is an error to suppose in a great many things there can be but one way to attain certain results. It is true only one may have the greatest economical value; but the differences in many cases are so slight, and as people hold different opinions they will often adhere to a method they are acquainted with in preference to all others, though there may be more inconvenience with it, when they think the expense of making the change and the trouble involved, greater than the benefit to be obtained. The inventor may die, or become insane from an overtasked brain, before he has the satisfaction of completing his invention, or getting any return from it.

All these suppositions clearly show the poor inventor has little or no chance to gain anything from his invention. The poorer he is in money the more likely to press his invention, and make sacrifices to perfect it. The poorer he is in inventive ability the more likely to be deceived by his own little contrivances, and led on by overestimating their importance.

With many, if their circumstances were better, they would not interest themselves in getting up patents. When an inventor fails to make anything on his contrivance, his excuse generally is, he had not money to forward it, and only for this want he would make of it a grand success.

This may be true or not; but it is always an available excuse, and he can use it in good faith, there being so much indefiniteness about inventions.

Only for the want of money he could forward his invention, and only for the want of money he would not attempt to invent. Inventing he employed as a means to this end; but if he had the money in the beginning he would not mind the inventing.

This is the reason we find so few with money who attempt or bother themselves with inventions, except to speculate in them, which they are ever ready to do.

Men with money prefer other pursuits where they make good pay with little or no labor. Banking, stock-jobbing,

renting, trading, speculating, and usury, are their favorite employments, and such as pay them well, and derive their profits directly or indirectly from the labor of others, — for these avocations are not productive, — do not produce anything, and, therefore, do not add to the wealth of a nation. Inventors are just the opposite class, and stand in the first rank as producers when they bring out something useful, and it is perhaps on account of the few really good inventors that so many poor ones are tolerated, and importance and a show of fairness attaches to the patent system; just as the fame of a few great doctors and lawyers upholds the honor of their professions, and to a certain degree clothes with dignity those far beneath them in the same callings. It would be well for the possible inventor to imitate those having plenty of money, — to put out no cash where he is not sure of some return. When the inventor neglects his occupation to devote his time to new devices he runs the risk of rendering himself worse off than before. If his wages were too small they will be still smaller if he gives much of his time to other matters that pay him nothing, and require more or less outlay of money.

There are hundreds of workmen throughout the country who lose thousands of dollars every year in securing patents that are of no value to themselves or any one else.

Not, of course, the same parties always, but a new crop springs up each year, willing to put out money in this way, and so the great fraud is perpetrated and kept going, without those who come after ever knowing the fate of the former, or suspecting they are almost sure to meet with nothing but failure. When a man loses a hundred dollars in obtaining a first patent, he will not so willingly part with a second hundred to get another; but he will not take the trouble to caution those who come after him and will be deceived in the same way.

He considers patents have already cost him enough without going to the expense and trouble of trying to enlighten others, who even then would hardly pay any heed to him.

Though at first setting the highest importance on patents, he finally, by sad experience, becomes as oblivious to the pearls scattered all round him in the guise of undiscovered contrivances as to the beautiful statues that lie hid in every block of stone which only require the removal of the superfluous matter to disclose them in all their sublimity. He

has learned the removal of such matter and the working out of such devices are the only real difficulties in the way, and the fact that he thought himself an inventor does not render it much easier to him than most other people.

It may be claimed if patents should be abolished, so ought copyrights; for they are of the same nature. It is true they are much the same, being titles to property in ideas, and the intent of the law is the same, — to reward the author and inventor for the supposed benefit they confer on the public.

If there was no copyright law none but the makers of books could suffer for want of it, but useful books would be turned out to nearly the same extent. The copyright inducement exerts nothing like the vast and pernicious influence of the patent-law, and for obvious reasons.

Every fool cannot write a book, but it is claimed by the solicitors he can get up a contrivance worthy of a patent.

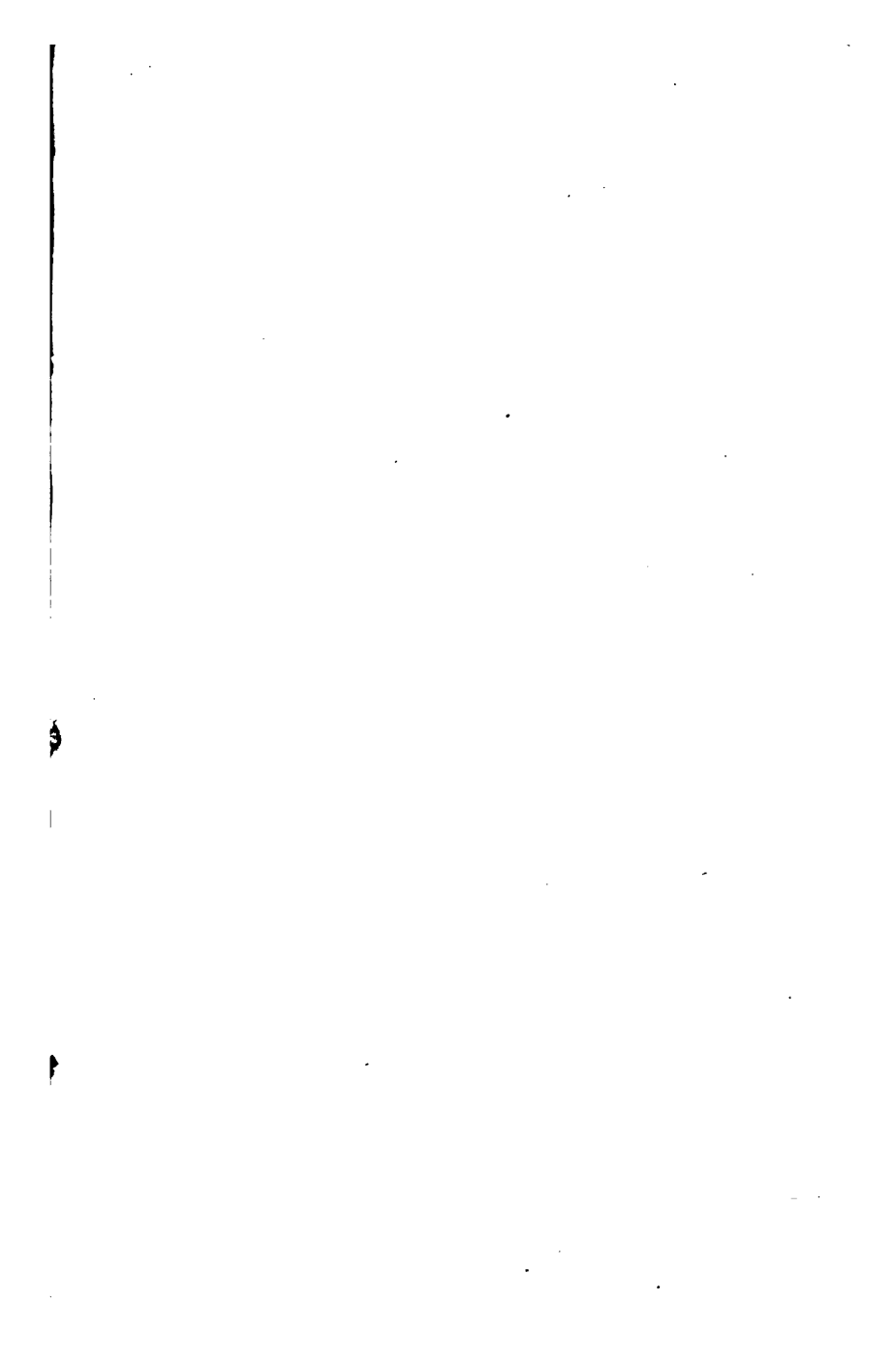
Books, especially in recent times, and from living authors, are not so indispensable that we are obliged to have them.

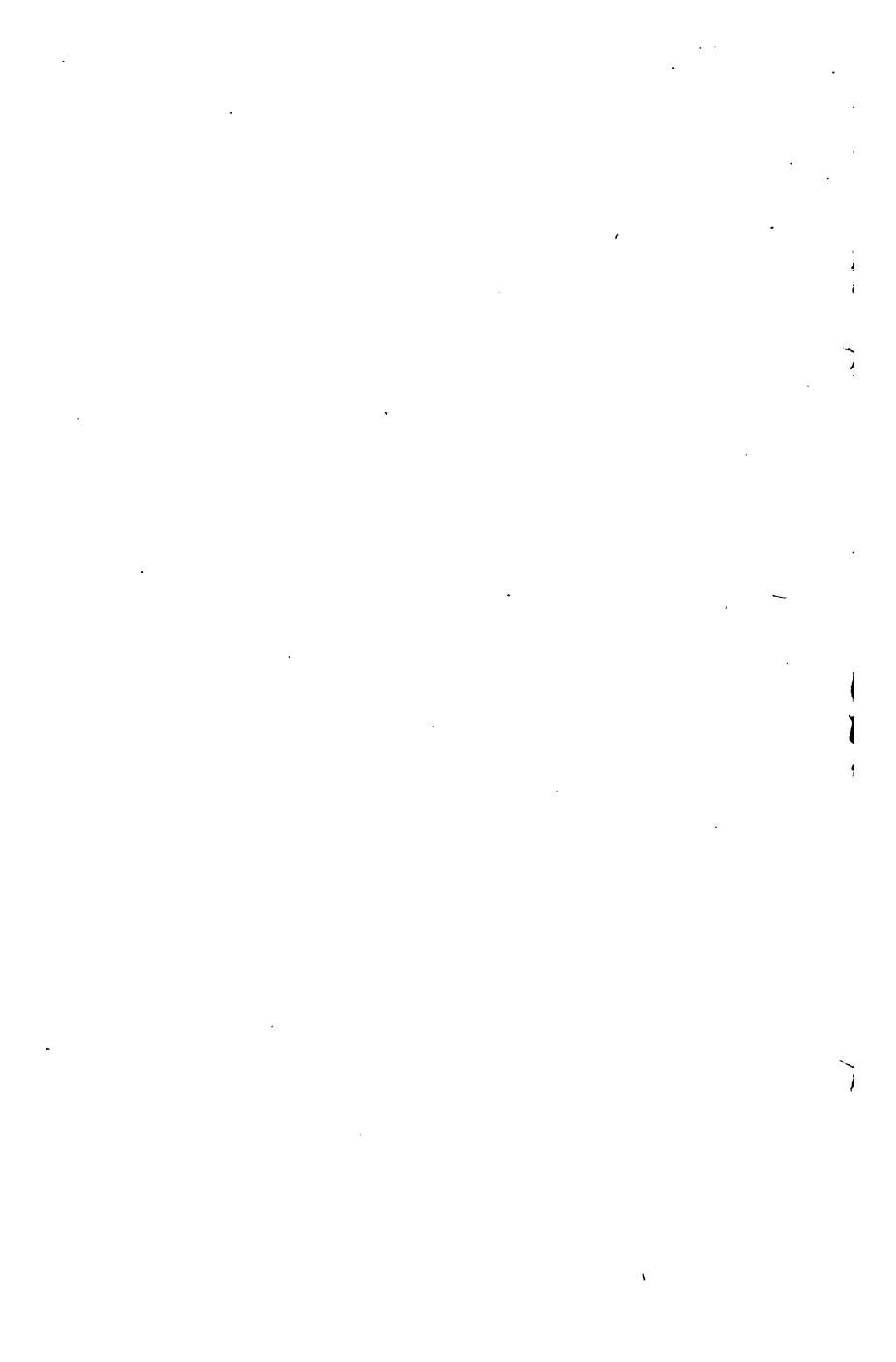
Some mechanical inventions become such a necessity, the public demand and must have them at almost any price.

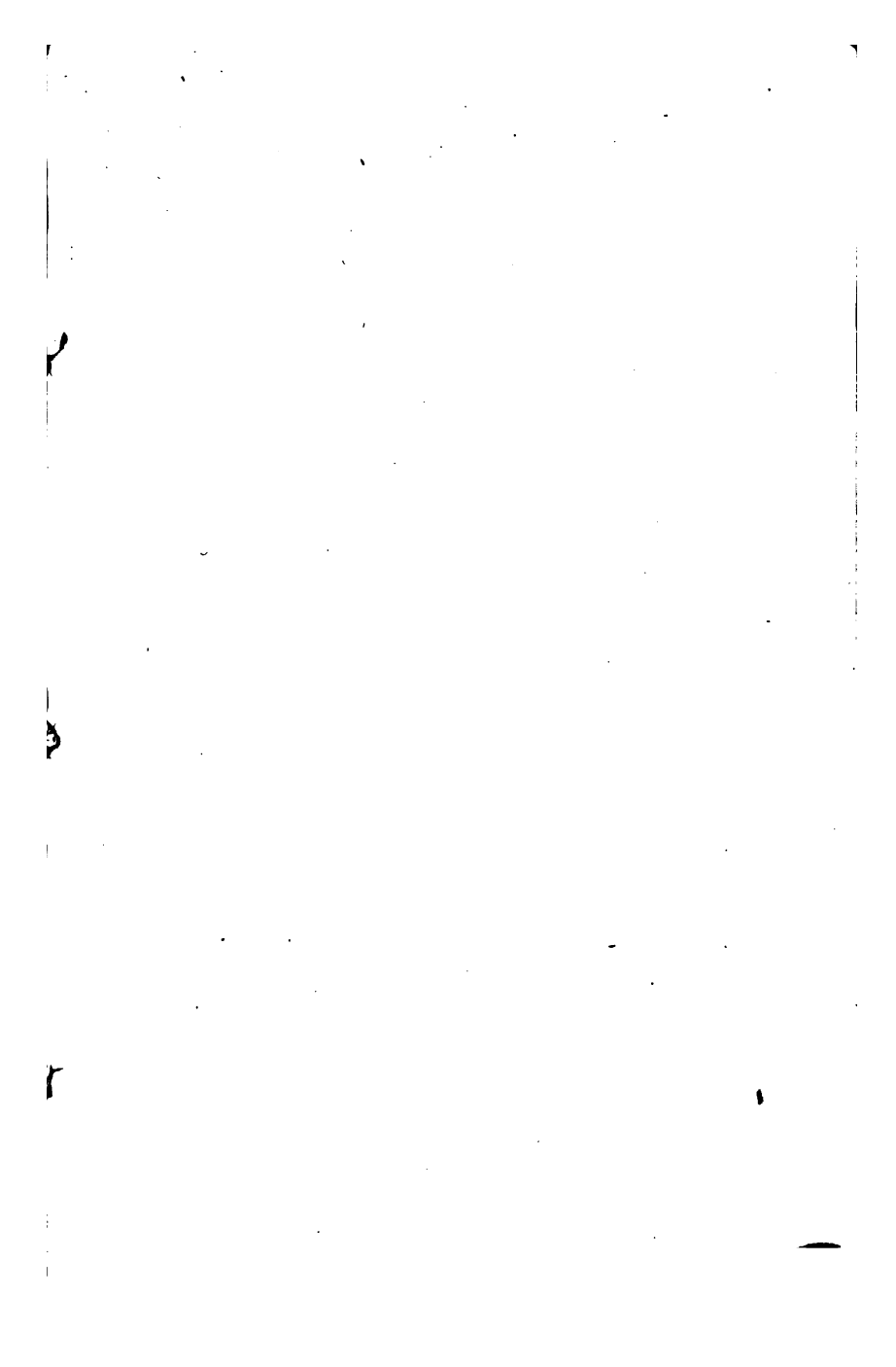
If one manufacturer adopts a new machine, that saves him labor, another must do the same to be able to compete with him. In like manner articles produced by patent devices and processes are so equally a necessity in some instances, people can be greatly wronged by the high prices put upon them on account of the patent right.

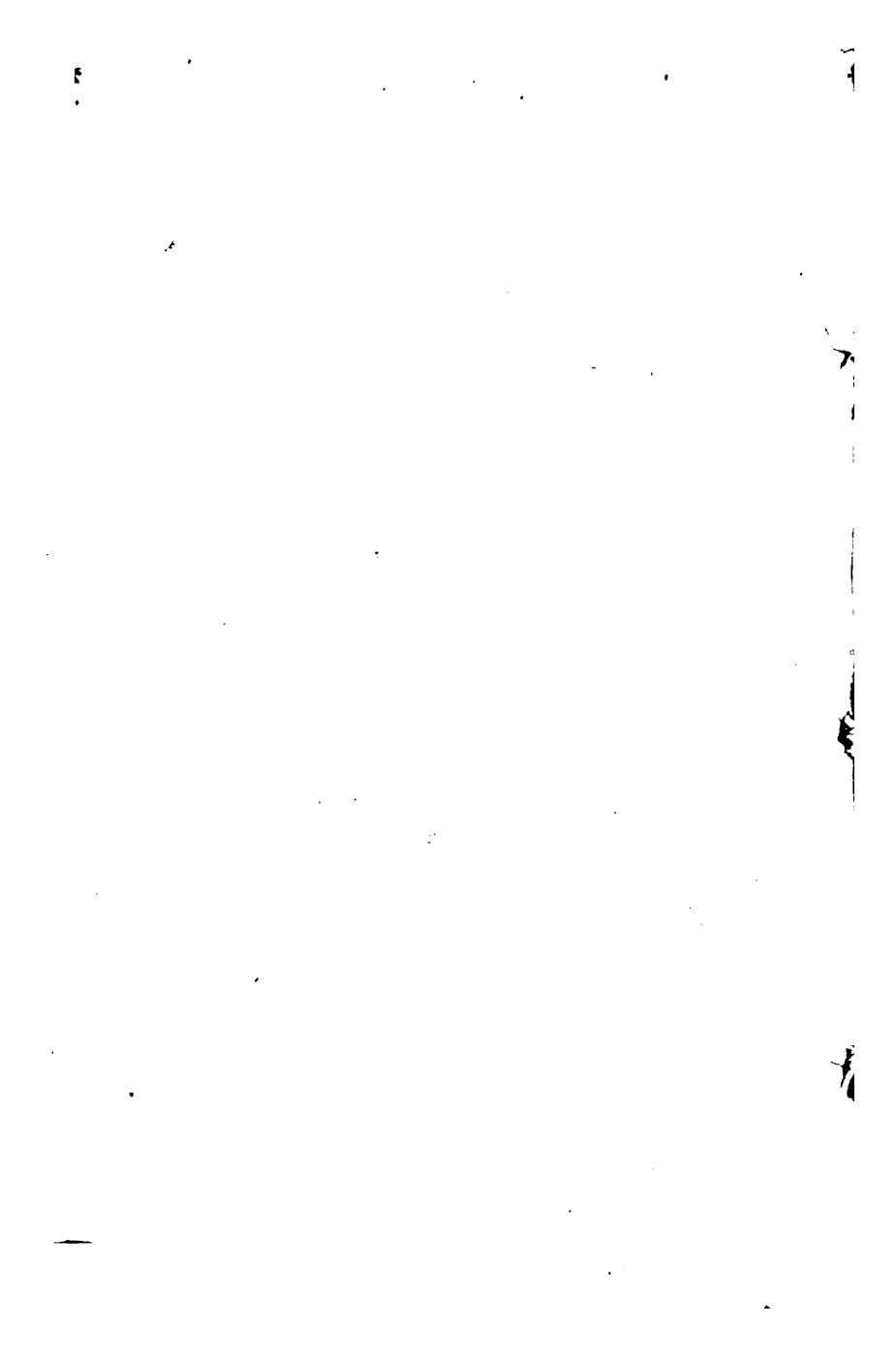
There never was, and cannot be, any opportunity to defraud and rob the general public, only by getting hold of what to them are necessities; and this is the reason why the monopoly of land has always been the first thought and care of those who who desire to rule, it being, above and beyond all others, the most necessary thing to man, supplying him with that which sustains life. Copyrights, therefore, cannot be in any proportion so great an evil as patent laws. A copyright does not now add but slightly to the price of a book, while a patent has often added five hundred per cent.

Patent laws may be considered one of the grievances of the working-man, and it is strange they should cause loss and deception to so many. He surely has enough to contend with by steering clear of patents, and there don't seem to be any reason for his losing by them but his own ignorance.







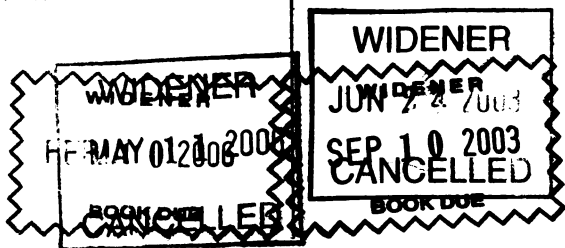
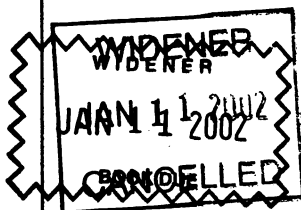


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